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ABSTRACT

Member countries of the Organisation for Economic Cooperation and Development have experienced three changes in post-compulsory education over the past two decades: (1) prolonged secondary education has become the experience of a rapidly growing proportion of the population, (2) the proportion, therefore, of the age group entering some form of higher education has increased and will continue, and (3) as the proportion entering and completing higher education increases, so the numbers undertaking studies at an "advanced" (e.g. graduate school) level will increase. In most cases, these trends are the result of conscious policy decisions that represent the desire of governments to maximize talent utilization, equalize opportunities, and increase the educational participation of certain underprivileged segments of society. This wider participation has led to important changes in both the external organizational structures and in the internal curriculums (including methods of teaching and assessment) of higher education. This growth in scale and cost raises important questions about controlling the higher education system and about the role held by education in the social system. Related documents are: ED 057 470, EA 004 323, EA 004 420-423, and EA 004 425. (Author/JH)

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Background Study No. 6

CHANGES IN SECONDARY AND HIGHER EDUCATION

The attached report is one of a series of Background Studies prepared by the Secretariat for the Conference on Policies for Educational Growth. It has been written by Alan Little.

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CHANGES IN SECONDARY AND HIGHER EDUCATION

Summary

Most types of post-compulsory education in Western countries have experienced increases in enrolments over the past two decades. However, equally important as the voluntary expansion have been the conscious policy efforts to stimulate further expansion in enrolments. A critical factor in this policy decision has been the desire of governments to obtain not merely more students and pupils in higher education (for a combination of the economic reason of maximising talent utilisation and the social justice desire to equalise opportunities); but also the wish to obtain wider and more effective participation of certain sections of society in full-time, prolonged education - especially the under-privileged groups. Partly as a means of meeting the demand for additional places, partly as a response to the growing numbers of pupils and students, fundamental changes have taken place in the nature of the educational experience. With the variety of educational systems that exists in Member countries, one set of ideas can never cover the variety of changes that are taking place; but as far as secondary schooling is concerned the emergence of less differentiated systems is the salient trend.

Differentiation in secondary schooling and higher education should be considered on two separate levels: the structure of the system external to individual institutions and the internal structure of the institutions. Traditionally secondary school systems have evolved a parallel system of secondary schools: academic (gymnasium, lycée, grammar schools), general education (hauptschule, CEG, secondary modern) and vocational (berufsschule, CET, technical) differing in their curriculum, age of leaving, and relationships both with higher education and the labour market. Frequently these different types of secondary schools were staffed with teachers trained in different institutions, their curricula were markedly different, as was their relative prestige. In this context the most striking immediate innovation has been the development of comprehensive secondary school structures: a school system which joined under one roof the variety of types of schools traditionally kept physically separated. For lower secondary schooling this is a dominant tendency, although it is less strong in upper secondary education. Not all secondary systems have introduced comprehensive structures, but those that have not have attempted to prevent restrictive educational practices stemming from early differentiation into several types of selective schooling by innovation in the secondary curriculum. This is the emergence of wider common areas in what is being taught in a structurally differentiated secondary system. The aim is to enable pupils to transfer between types of secondary school later than the normal age of entry to these systems. Differentiated selection will not be irreversible, because of a common curriculum. This point is also important in systems that have introduced

comprehensive external structures; some of these have also sought to prevent internal differentiation into watertight streams by introducing a common secondary school programme to be followed by all pupils until aged 14-16.

Wider participation and widening of opportunities have also brought about (and in turn have been brought about by) changes in the structure and content of higher educational systems. The evolution towards a "mass" system of higher education has taken place, and has created tensions in the existing system. However, these have been resolved in different ways to the innovation in the secondary school system. The traditional pre-eminence of the university in the third tier of education - and in many systems the university is not merely pre-eminent it is the only facility on this level - has not generally been changed by incorporating other types of higher education into it. If anything the reverse seems to be the current trend: the emergence of increased variety in types of institutions in higher education. In part this is, perhaps, because of the university system's reluctance to modify itself to meet the changed and changing needs of students and society alike, but no less important are fears about the length, expense and suitability of university types of studies for new types of students; hence, in many countries the emergence of new types of third-tier institutions, or the elevation of a variety of facilities not traditionally considered on the same level as universities. What the 1970's may see is a parallel pattern of higher education, analogous to its recent counterpart in secondary education. Whether it will be forced by economic need, political action, or social and educational pressures, to unite into comprehensive or common facilities, as many secondary school systems have, is a policy question for the next generation of educational administrators.

Change has not only been in external structures and internal curriculum, the actual nature of the teaching situation (especially in secondary schools) and methods of both teaching and assessment have been subject to significant changes. The pressure for these has been from various directions: student demands for more relevant curricula, pedagogic pressures to change the nature of educational objectives from a content orientation towards an approach that stresses ways of looking at problems and issues; and, in turn, new curriculum and new teaching methods require new methods of pupil-student assessment. As the nature of the educational experience has changed (what is being taught, how and to whom) so must the criteria and methods of educational assessment. This change is limited only by the perhaps desirable conservatism of the system, and the short-run restraint of lack of finances and the long-run possibility of limited pupil-student capacity and motivation.

The growing size of educational enrolments and the scale and costs of the system have generated another problem: that of controlling the system. This is partly a "financial" problem of controlling expenditure, and especially controlling rates of increase in expenditure. In addition, the size of individual educational institutions has increased and so has the complexity of the teaching-learning situation. This has meant that the administration of individual schools and colleges has become an increasingly complex, skilled and specialist activity. Of particular significance has been the problem of the types of skills and training required to administer large institutions, with highly differentiated curricula and varied types of individualised educational programmes. This problem has not been eased by recurrent and growing demands from junior members of academic staffs and the student body for wider participation and involvement in the decision-making procedures of institutions. All of these pressures have led to a re-thinking of the "role" of the teacher whose central activity is changing from being the information transmitter, to being a manager and manipulator of a multi-resource situation.

Perhaps the most critical question still unanswered after recent experiences is the role education has in the social system. One aspect of this is particularly significant in the current debate: the extent to which the education system is an independent factor in social change. How far it can generate the force(s) for economic development is one general question, as is the extent to which it can be an instrument of social justice (i.e. a means of alleviating and circumventing inequalities that stem from other institutions in society). Related to this discussion is the role education has for the individual (is it essentially a preparation for work or for citizenship?), and the extent to which it is a phase in life (full-time, compulsory schooling terminating in late adolescence and early adulthood) or an experience that recurs throughout life, i.e. permanent education. It is this question of permanent education, for economic as much as socio-political reasons, that is likely to be a crucial area for future educational policy discussions.

CHANGES IN SECONDARY AND HIGHER EDUCATION

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CHAPTER I

INTRODUCTION

1. It is best if the quasi-empirical assumptions of this paper are made explicit at the outset: three broad types of empirical trends can be detected and have been detailed in other Background Studies prepared for this Conference:

(a) Prolonged secondary education has become the experience of a growing minority of the population and will become part of the education of the substantial majority of the relevant age group during the next quarter of a century.

(b) With growing numbers successfully completing secondary education, so the proportion of the age group entering some form of higher education has increased and will increase. In fact, it is probably no exaggeration to say that in many countries by the 1980's the percentage of the age group entering higher education will be as high, if not higher than the percentage entering academic secondary education in the early 1950's.

(c) As the proportion entering and completing higher education increases, so the numbers undertaking studies at an "advanced" level (i.e. graduate school) will increase. A somewhat similar tendency is likely, as was noted under point (b) above - the percentage of the age group entering graduate school by the end of this century may well be as high as the percentage who entered undergraduate studies one or two educational generations earlier.

2. These are the main empirical trends in educational enrolments, and they have been amply illustrated and documented. The point can be extended by looking at a few isolated examples: in England and Wales the anticipated percentage of the age group entering higher education in the 1980's (Robbins estimates) is roughly the same as the percentage who entered selective secondary schools (grammar schools) thirty years earlier. Further, in the six years since the publication of the Robbins report, the percentage of secondary school pupils obtaining minimum entry qualifications for higher education has increased at a faster rate than anticipated. As a result, although the numbers of places being provided in the various types of higher education is in excess of Robbins recommendations, at least as far as universities are concerned transition rates of suitably qualified applicants are declining.

3. As a result of the combined force of increases in the size of the age group and increases in enrolment ratios, the numbers of people obtaining the baccalauréat increased from nearly 63,000 to over 100,000 between 1962 and 1966 in France. The VIth Plan anticipates that numbers will continue to increase into the 1970's. A similar story can be told for Sweden, between 1950 and 1959, the percentage of the relevant age group obtaining the student-examination increased from 8% to 14%. Parallel with this, the numbers entering higher education also increased by similar amounts. Already in Sweden roughly one-third of the age group (16 and 17 year olds) are entering the gymnasiums and nearly 3 out of 4 are receiving some sort of voluntary post nine-year education. The same trend is discernable in economically less-developed parts of Western Europe. In Austria the percentage of the age group in the final year of general secondary schools increased from 3% to 8% between 1956 and 1966, further the Austrian authorities anticipate that, by 1975, 14% of the age group will be completing academic secondary schooling and most of them entering higher education. It is worth noting that in the mid 1950's the number of graduates from the general secondary schools was 3,259; in the mid 1960's it had doubled to 7,380 and by the mid 1970's it will probably be over 11,000.

4. All these examples make the points suggested by the three assumptions asserted at the outset. But it is possible to give an actual example of the probable nature of educational enrolments in Western European countries over the next generation. The actual situation in the U.S. at the moment reflects the educational profile implied in points (a), (b) and (c) above, with the entire age group enrolled to mid-adolescence, with roughly 2 out of 3 graduating from secondary schooling and with more than half of these (35% of the age group) entering higher education and 25% of the age group completing their undergraduate studies successfully. Current U.S. estimates suggest that half university graduates continue their studies into some form of further studies or graduate schools (i.e. entering a fifth year of higher education). It is anticipated that the American experience of the past twenty years will be that of Europe during the next two decades. What it means is that instead of the majority of the age group finishing their education aged 13-15, the age of completion will be postponed for 2 or 3 years as a result of increase in the length of compulsory schooling and, even more important, increasing voluntary enrolments. Further, the proportions of the age group staying on and completing later stages of upper secondary and higher education will increase. The change will not only be a postponement of the age of completing schooling, but, equally important, a changed proportion receiving higher levels of education.

CHAPTER II

FACTORS EXPLAINING THESE TRENDS

5. Before discussing the implications of these increases in enrolments, it is worth noting the various general factors which have been used to explain them. The phrase "used to explain" has been utilised deliberately. The demonstration of educational growth is straightforward, scientifically explaining that growth is by no means simple. What can be done is to list certain general factors which common sense and observation suggest are related to educational expansion; but the actual mechanisms (social, economic, psychological) which relate these factors to the decision to stay on or drop out of school have not been adequately analysed. Nor in the present state of social sciences is it possible to weight these factors and detail their relative importance to the total increase - past and future - in enrolments. Educational analysis is by no means unique in this respect: demographers can detail changes in populations, they can outline general causes for these changes, but they can neither spell out the relationship between cause and effect nor weight the causative factors. Students of the educational system are in a roughly similar position to the demographers.

6. Four general influences probably explain the increase in educational enrolments, and are likely to bring about further increases over the next three decades:

(1) Growing Wealth

7. Although resource restraints may be treated as possible inhibitants of future educational growth, currently increase in wealth is a potent factor determining educational expansion. Perhaps the clearest illustration of this is the increase in gross national income and per capita income experienced by OECD countries since the end of the second world war; rates of growth differ but all countries have experienced profound increases in both their G.N.P. and per capita incomes. For many countries the quarter of a century since the end of the war has been the period of fastest economic development. Public affluence has at least generated the capacity for increased (and increasing) expenditure in education. However, the statistical correlation between economic development and change and educational expansion is by no means straightforward. Relatively underdeveloped countries have similar rates of expansion in higher education to those of highly developed countries. But "wealth" must be considered on a second level, not merely the general well-being of the community but the individual standards of living of the population. Something must mediate between general wealth and tendencies for more young people to stay on at school. One factor is private

affluence: traditionally, people with particular levels of income seek for their children particular levels or types of education. What we have seen over the past decades is an increase in the numbers of people with these levels of income, hence an increase in educational enrolments. This seems both naive and a statement of the obvious, nevertheless it may well be the most potent explanation of past and future expansion in enrolments. In fact, there has been a revolution in educational aspirations and expectations in many sectors of the population. Amongst traditionally affluent sections of the community prolonged education of their children was probably seen as a consumption good, a way of demonstrating their wealth, and a social convention; with the increasingly close relationship developing between educational experience and job opportunity, what was socially desirable as a sign of privilege became necessary as a means of maintaining privilege. For other sectors of the community, education was a way out of a situation of socio-economic disadvantage, with increasing affluence and extension of facilities it became a means that in practice could be used.

(2) Levels of Skill Socially-Economically Necessary

8. Increased public wealth created the possibility of greater expenditure in education. Politically what turned a possibility into a reality was the realisation that the increased complexity (both economically and socially) of industrial society generated the need for higher levels of education for both its citizens and its labour force. A premium has been placed upon literacy as a means of social survival in a society in which the means of communication have become increasingly the written word, and in which the capacity to read and write are a pre-requisite for minimal levels of socio-political participation. Allied to this, the shift in the nature of the productive process away from primary production (agriculture, mines, lumbering, etc.), through secondary (manufacturing), to tertiary (service activities), combined with an increase in the proportion of the labour force that is highly skilled (the professional-managerial cadres) has meant that education has become increasingly important as a means of directly or indirectly preparing individuals for work.

9. To some extent point (1) has been given the name social demand and point (2) manpower demand which have been considered as factors influencing educational participation rates, and more particularly as a means of anticipating future enrolments. Although, for the purpose of analysis, these two should be kept separate, they are in fact inter-related and inter-act. Clearly the educational aspirations that individuals have are not unrelated to the employment possibilities a particular education opens up. Equally significant, the educational requirements of a particular type of employment are a function both of the technical requirements of the job and the

particular levels of education from which suitably qualified people can be recruited. As levels of educational participation increase, so do the entry requirements of particular levels of employment. There is, therefore, a dynamic relationship between labour market and social demand - each affects the other. Over time, educational participation has increased, is increasing and will increase, because of the growing influence of both forces.

(3) Opportunity-Efficiency Argument

10. A further political stimulus to structural reform and educational expansion has come from the use of the educational system as a means of social engineering. Again there are two inter-related arguments:

(a) In essentially inegalitarian societies - and industrial societies merely differ in the degree to which they are inegalitarian - inequalities can only be justified insofar as rewards, especially income differences, are closely related to the socio-economic significance of position, and insofar as there is freedom of movement between positions. This is the "careers open to talent" argument;

(b) In complex industrial societies certain technocratic positions require highly trained people, but few people have the natural talents either to benefit fully from the training or to function effectively in the position. This is a "scarcity of talent" argument.

11. Social justice demands open access to positions of privilege and prestige; social efficiency demands the recruitment of the talented (from whatever origin) to these positions. The former is the argument of equity, the latter of necessity; both give a crucial role to education as a means of simultaneously training, opening careers to talent, and recruiting scarce talent from all sections of society. The purpose at the moment is not to re-affirm these arguments or the feasibility of education as a means of realising the objectives; it is to state that politically both the arguments and the role of education outlined above have been accepted; further, that their acceptance is one of the factors behind the increased willingness on the part of the governments to spend money on education.

(4) The Explosion in Knowledge

12. A further general factor behind both past and future expansion in educational enrolments is the explosion in knowledge. This can be put very simply: if in the past it took us hours (or days, weeks, months, years) to transmit a particular skill or talent, it may now take much longer,

simply because of the increases in the amount of information to be absorbed and techniques learnt. The level of education to which this point is particularly pertinent is obviously higher education, because it is in the realms of highly skilled manpower (doctors, engineers, professional scientist, etc.) that the explosion in knowledge has been greatest. Illustrations of this explosion abound - the increase in the number of books published each year, and the volume of scientific and medical research completed since the war are obvious examples. The implication of the point is that education is being prolonged not merely in the sense that more are being educated, but in a further sense that the acquisition of sufficient knowledge to become professionally competent in certain cadres of employment takes longer. Hence the upgrading of educational qualifications demanded by certain types and levels of employment and, equally important, the shift in what is being taught and in teaching methods to meet the changed and changing "knowledge situation".

13. These four factors have separately and together generated the need, the means and the impetus for educational expansion. Further, they are the forces that will stimulate expansion over the next decades. They do not exhaust the influences upon the system: for example demographic factors - which had a considerable influence on enrolments in the fifties and sixties - have been ignored. On top of this, the educational system itself is a potent pressure for expansion in at least three senses:

(a) Like other parts of the social system it has its own means of mobilising expansion, through semi-political pressure via teachers unions, political parties, and educational writing, to encourage wider participation and greater educational expenditure both as an end in itself (education as a good) and as an instrument for other social-political-economic objectives. Here the system attempts to generate a demand for itself by activity outside the educational system.

(b) The system has, to no small extent, control over its own "demand" through its control over its direct consumers: the pupils and students. It (and particularly the teachers) can seek to motivate them to stay on at school, and participate longer in the system. Here the system creates its own demand, by encouraging consumers to remain within the system.

(c) But, the educational system does not merely train people for other parts of the socio-economic system, it is one of the greatest consumers of its own highly-trained manpower, i.e. the teaching profession. An entire level of higher education (teacher training) is concerned with the preparation of the profession and, in addition, traditionally one of the greatest

sources of employment for university graduates was within the educational system. This, then, is a system that consumes itself; in the short-run a relatively small increase in general educational enrolments can mean a considerable increase in the demand for places in higher education. Here the system consumes its own products.

(5) The Impact of External Pressures

14. These are the four pressures "external" to the educational system, creating forces to which the system must respond. They are organic pressures on the system in the sense that all levels and types of education experience them and have to adjust to them. To take an extreme example, although the impact of the "knowledge explosion" is easier to illustrate, and perhaps more significant on the levels of higher education, its influence can be seen in other levels of education. The curriculum in the later stage of academic secondary education has had to be both adjusted and expanded to take into account changes in the nature of the demand for higher education. Even in primary levels of education, the expansion in knowledge and, more important, the change in attitudes towards knowledge (especially a critical uncertainty about what is known) is influencing both what is taught and how. The effort to introduce the "scientific attitude" (in contrast to the content of science) in innovatory programmes in school science provides one set of examples, as do the various innovations in mathematics teaching in many countries.

15. But this is not to say that all levels and types of education are equally vulnerable to the pressures generated by these macro forces. Differences exist both between levels of education (primary, secondary, higher) and types of education (academic, vocational, technical, general) in the intensity with which they are felt. An obvious example of this is the demand from the labour market for trained manpower. The direct influence of this pressure is far greater on the higher or secondary levels of education than it is on the primary. In the latter, the main emphasis is on a common general schooling, justified on a multiplicity of social and educational grounds. A stronger case can be made out for systems of higher and even upper secondary education to be more responsive to vocational opportunities in determining what is taught and how. Similarly the intensity of the labour market forces is more directly felt in certain faculties. An obvious case in point is the difference between subjects which are related to job preparation, such as medical studies or engineering in higher education, and various types of vocational programmes in secondary education; and those subjects which are of less direct application to the work situation, for example many classical and languages programmes in secondary schools, and, to a lesser extent, natural science programmes. Amongst the former the vocational content is high, and the pressure of labour market needs in determining how many are educated and what type of

education they receive is considerable. By contrast, the direct influence on labour market needs on the teaching of classics or languages is small, but not necessarily insignificant. For example, the relative popularity of subjects selected by students may in part be influenced by their career opportunities and aspiration. In other words, by their perception of labour market possibilities. What this argument suggests is that it is the INTENSITY of these pressures that differs, not their existence.

16. Despite this observation, two broad generalisations can be made about changes in these pressures over the past 10-20 years, and their likely continuation with increases in enrolment over the next quarter of a century:

(a) A decline in the total impact of economic factors and influences on who shall be educated (i.e. how many pupil students there are), and a commensurate increase in the intensity of socio-political factors in determining the number educated, at what level and, probably, receiving what types of education. With increasing wealth (both personal increases and national income) the resource restraints limiting educational opportunity are being gradually reduced, first of all in lower secondary schooling, and more recently in secondary and higher education. Hopefully by the end of the century these will have been virtually eliminated throughout education by a mixture of economic growth and the greater priority given to education within society as a result of rising aspirations. This will mean that the influence of socio-political factors on who shall be educated may well dominate even higher education by the end of the 20th Century.

(b) A decline is anticipated in the significance of discussions about the content of education (what is taught and what is learnt) and an increase in the importance of how a subject is taught. This is largely the result of what was briefly mentioned earlier on the knowledge explosion, which will mean - particularly in highly technical subjects and specialised fields - what is learnt will be quickly outdated by further research. Hence the emphasis upon methods of obtaining knowledge and approaches towards a subject or subject area. Allied to this is the increased interest, especially in higher education, of breaking down subject specialisation and introducing students to broad areas of study and enquiry. This particular process is an attempt to break down the barriers between disciplines (between economics and sociology and psychology, or mathematics and physics, chemistry and the biological science) and between broad areas of study (natural sciences compared with the social science).

17. Both of these generalisations have a point of contact: namely, one of the factors influencing labour market requirements has been the demand from employers for secondary school and university graduates with a general training and education that can be applied in the work situation rather than a specific discipline or technical skill that can be transferred to it. This point is of particular significance when it is remembered that with the expansion of enrolments the types of work that secondary and higher education graduates will enter will not be those which traditionally they would have entered from this level of education. Again American experience is illustrative: many levels of employment (both skilled manual and routine non-manual) require as a condition of entry a high school graduation diploma. Other grades of non-manual work (bank employees, policemen, lower level management etc.) require several years college or college graduation. Such requirements, although unthinkable in Western Europe in the fifties and sixties, may not be by 1980's or 1990's. Insofar as prolonged education prepares these people for their work situation, it is not by either vocational training or by an intellectual training emphasising either subject matter or a particular discipline. What is required is a period of prolonged general education that enables individuals both to realise and discipline their talents.

18. One point must not be lost sight of in this discussion: although the general force of economic factors may diminish, they cannot be eliminated. In particular, certain areas of education will always have a considerable vocational content (mentioned earlier were the medical sciences, engineering and technology). Here the impact of labour market requirements will operate on two levels:

(a) Determining the contents of the course of instruction: occupational life will involve applying what is learnt to specific situations. Therefore the content of the course (both in the sense of what is learnt and the methods and principles of enquiry) will be of considerable significance and, given the knowledge explosion, require regular up-dating.

(b) Determining the number being educated: if too many (or too few) students follow these specialist fields then there will be either a surplus of individuals with specialist skills that can only be absorbed by the labour market at levels of occupation lower than individual aspirations, or a deficit with consequent scarcity of trained manpower. Given the point that these types of education are prolonged and costly, a surplus of trained manpower would be a waste of human and economic resources and may well be frustrating for the individuals concerned. On the other

hand, a deficit may be difficult to reduce quickly, with resulting economic and social inefficiencies.

19. Therefore, in these fields manpower requirements will continue to be a salient influence on the number receiving this type of education. These then are exceptions to the first general proposition suggested above: manpower forces still directly determine much of the content of the education and the numbers receiving it in their fields. But the point must be made that these are only a minority of the subjects covered by a system of secondary-higher education, and therefore the general proposition remains.

CHAPTER III

THE INTERNAL PRESSURES WITHIN THE SYSTEM

(1) The Numbers

20. The argument above suggests that the educational system can be treated as an organism made up of inter-related parts, responding to a common set of external pressures of differing intensities according to levels and type of education. But the system is not merely inter-related, it is also inter-dependent. Each level is dependent, in part, on what has gone before; each subject - both how it is taught and what - in principle affects the ways in which other subjects are taught. Because of this, changes at one stage or level of education require adjustments and modifications at other stages or levels. Modifications of the structure, curriculum or teaching methods at one level of education can bring about the need for reform, or at least adjustment, at other levels.

21. Perhaps the most striking example of this point is the way in which the growth of pupil numbers through one level of the system brings with it the need for expansion at the next. Clearly, the demand for expansion of higher educational institutions in response to the growth in numbers of graduates from upper secondary education is a case in point. No system in Western Europe has been left untouched by these quantitative pressures. But simply to suggest that growth at one level demands growth at others is to oversimplify both the policy alternatives and the possible short-run restrictions of lack of facilities and finance.

22. One example of such alternatives and restrictions is provided by Sweden. The reform of lower secondary schooling (the 9-year comprehensive system) was both a change in the structure of the schooling (a common school) and a profound

change in the nature of the curriculum. An especially important part of the latter was the objective of encouraging flexibility in the choice of subjects and enabling transfer between specialisations. Specialisation was to be postponed by leaving options open. Further, initial choice of subjects was left to the decision of the pupil and his parent, although effective performance through the "system" was a limiting factor. This role of parental-pupil choice was considered crucial, and was to be continued into the transition to upper secondary schooling (gymnasium, fackskola and continuation schools). The decision not only about staying on at school but about the type of course to be followed, was to be left substantially to the decision of the pupil, supported by parents and advised by the teaching profession. The result was a large majority of the population in 8th and 9th grades opting for courses that gave the right of entry to the gymnasium (i.e. continued academic study, traditionally leading to the university) and an over-subscription at the end of the 9th grade for these courses.

23. One solution might have been simply to expand the gymnasium structure to absorb the growing numbers of mid-adolescents wanting entry. Certainly, in Sweden considerable expansion took place in gymnasium entry; and further academic studies could be taken outside the gymnasium in other types of upper secondary education - the fackskola and continuation schools - which could be followed by later transfer to the gymnasium. However, in the mid-sixties a policy was introduced temporarily fixing the proportion of the age group entering the gymnasium at ⅓ of the age group. This was justified largely on the grounds of the demand from the labour market for this type of training, but the resource difficulty of quickly expanding the numbers of gymnasia also played its part. This is an alternative solution to general expansion, by fixing a limit on the size of the entry group and thereby re-introducing selection for upper education; opportunity is limited by places available, and the number of places provided is justified in terms of likely employment opportunities for the graduates from the system and available educational resources.

24. The transition from secondary to higher education provides a further example of the same situation. Rapid expansion, both actual and anticipated, in the number of people qualified for entry to higher education has brought about discussions in many systems that have traditionally had "open door" policies to higher education (i.e. all secondary school graduates who wish to enter may enter). There has been public discussion in France, Germany and Sweden about the necessity (on resource grounds) and desirability (on grounds of quality) of restricting entry to higher education in general, the universities in particular, or in certain faculties. It is important to keep distinct the different reasons for introducing various entry restrictions. Some relate to the impossibility of expanding higher educational institutions any further, or

fast enough, either on grounds of lack of resources or because such expansion would bring about a deterioration in the education being offered. A further argument stresses the way in which expansion of lower and upper secondary education has resulted in a deterioration in the quality of entrants to higher education. This has been called the "more will mean worse" thesis. In addition, the long-range possibility of large numbers of higher education graduates being absorbed by the labour market has also been questioned. All of these have been used as arguments to limit entry to university, and to change the open door policy.

25. It is worth noting that, in certain respects, this policy has already been modified: in France and Sweden, for example, entry to certain faculties (medicine in both cases, but also certain types of engineering, and in some cases physical sciences) is restricted to secondary school graduates in certain appropriate lines; and in Sweden selection is partly based upon performance. A similar "performance" proposal was discussed in France, as was a more general set of restrictions on entry. The fact that they have been turned down should not result in our ignoring the initial reason for suggesting them, nor in our assuming that as the pressure of numbers from below increases in the future similar suggestions will not be made again. In fact, similar restrictions to those in Germany already exist in France. Also, in this context it must be remembered that the U.S. system (which, it was suggested earlier, might provide an illustration for expanding European systems) does have limited right of entry to certain types or levels of higher education. The existence of private, selective institutions is one example; restriction of right of entry to state universities to high school graduates with a particular average grade point (based upon rank position or grade average) is another; finally, the existence of a differentiated state system of higher education (junior colleges, state colleges, state universities), frequently with different entry conditions, is a means of restricting entry not to higher education but to individual institutions and to types and levels of institutions. On top of this, a high rate of failure, especially in the first year of university, can be seen as a means of effectively controlling the absolute number of students (in some colleges as many as 50% of entrants drop out during the course). "Control" on student numbers is achieved by higher attrition rates, and expenditure is partially limited by a differentiated system of higher education.

(2) The Impact of Changes in Teaching Methods

26. Although expansion in numbers is perhaps the most dramatic change that has taken place in both secondary and higher education, of considerable significance are a series of pieces of structural changes (i.e. the relationship between types of educational facilities) and modification of the curricula, both in terms of content and method. In their own

way, these have brought about the need for adaptation of other aspects of the system. Two such adaptations are of immediate significance: the methods of assessment being used, and the new types or styles of teaching situation.

(a) Methods of assessment

27. In a sense this is a similar problem to the criteria used for entry, discussed above; but in this context it relates to the way changes in what is taught and how have made traditional methods of assessment inadequate. Reforms in lower secondary schooling are a case in point. These have generated, and are generating, three types of examination-assessment problem:

(i) The numerical. A system of examination that has evolved to assess a small minority of the population (national examinations using national examiners, both marking papers and interviewing candidates) is impractical when, instead of 5% of the age group, 25% or more may be submitting themselves for the terminal upper secondary examination and the entire age group for their lower secondary counterparts. In principle, the same point exists in higher education although the numbers involved are smaller. Sheer numbers may, on practical grounds, generate the need for change in the format of assessment.

(ii) Educational objectives. Traditional examinations (either written or oral) are seen to be inconsistent with some of the objectives of a reformed system of education. For some, the emphasis on assessment at one point in time is wrong; continuous assessment of the individual throughout his course, covering all facets of the work, is considered to be educationally more desirable. On top of this, the nature of traditional examinations tended to emphasise the content of a course and encourage memorisation of course content. This is seen to be incompatible with a system that seeks to encourage intellectual independence, self-directed enquiry, and a critical approach to a subject rather than the capacity to learn by heart. A less central example are the particular reforms of content in certain subjects - for example, new mathematics and science courses - which obviously cannot be assessed by examinations geared towards the traditional curricula. This is partly a question of new course content (what is being taught). But more important are the objectives. New science courses emphasise experimentation and personal investigation rather than second-hand contact merely using a textbook as demonstration. The constant plea from student activity for more "relevant" curricula is a further example.

(iii) Assessment of the "new" type of pupil-student. Related to the above, is a third and more contentious problem: traditional methods of assessment have been developed not only to examine a few pupils who were essentially elitist (it was at least assumed that they were the intellectual elite) but these methods were also part of the literary humanitarian tradition in, for instance, their emphasis upon the written word. It is questionable whether such methods are appropriate for a mass system of education, both higher and secondary; and for a system in which a substantial part of the instruction either does not or will not emphasise the written word, or at least not in traditional book form - for example, computer-assisted learning, programmed learning, language laboratories, educational television. Such techniques do not make the literary culture obsolete. They simply mean that the literary culture is only part of the total culture to which an individual is exposed. Future methods of assessment must have some relationship to the type of instructional techniques utilised. Finally, if traditional examination systems are appropriate for the "intellectually able", what happens in a system that is attempting to encompass and educate all levels and types of abilities? The system of assessment used must bear some relationship to the capacities of the pupils being assessed.

Frequently these factors interact with each other and/or point in the same policy direction as far as evaluation methods are concerned. The problem encapsulated under the "new" pupils, and practical problems of numerical expansion, are two ways of looking at the same set of problems. Further, modification of educational objectives is partly the result of - and also a means of encouraging - the numerical expansion and, therefore, the educational involvement of the new pupil.

(b) The new teaching situation

28. The basic change that is likely to occur in secondary schooling over the next quarter of a century has only been touched upon above. Although related to the expansion in numbers, it is not dependent upon it because it can be justified on purely educational grounds. Much of it is already part of primary school educational practice in some countries, and is becoming part of lower secondary. Its extension into upper secondary is basically the result of its educational merit, but is in part a consequence of upper secondary schools having to meet the needs of pupils whose earlier education has fundamentally changed. In essence, the revolution is in the role of the teacher and the relationship between pupil and teacher. It is tempting to see these changes in terms of a

new educational technology, but this is to compare the artifact with the reality. Three basic changes are likely in the teacher role and in the teacher situation. The complex educational technology is best seen both as a means of achieving these changes and as a spur to them.

(i) The concept of the "class". In primary schools, children of mixed abilities have been taught together, although "streaming" may be adopted as a means of differentiation in a common school situation. Such classes are likely to continue through lower secondary schooling and ultimately, perhaps, into upper secondary schooling. The reasons for this are both practical and theoretical: practical because the entire age group is continuing through the system, theoretical because it is considered desirable that common schooling (the opposite of differentiation-selection) should be prolonged. What this means is that instead of differentiation between institution and subjects, any differentiation that takes place will be within the classroom situation. This point will be discussed at length later, for the moment only one of its implications will be stressed, which is that the secondary teacher will not be confronted with a class of 20 or 30 pupils but with a class divided into sub-groups (what has become known as "family groupings"), or a class made up of 20-30 individuals pursuing their own studies at their own pace and direction (so-called "individualised" programmes).

(ii) The concept of the subject teacher. Traditionally primary schools have been class based, with a class teacher covering all or most subjects. By contrast, academic secondary schooling has been subject based, with each subject(s) having a teacher, but pupils rotating between teachers. For a variety of reasons the primary practice is being, and will continue to be, extended into secondary schooling. Again, there are mixtures of practical and theoretical reasons for this. The shortage of specialist teachers - especially in fields like mathematics, the sciences, and to some extent foreign languages - in a system in which the entry age group is being exposed to specialist subjects, is an example of a practical factor. Allied to this is the shift away from the idea of "subjects" (e.g. languages, geography, history, literature) towards an "area" of concern or interest. In part, such concerns are the result of fears of early subject specialisation and consequent narrowness of attitude in education. In part it is the result of the knowledge explosion mentioned earlier: that detailed and subject content are less important than the manner in which knowledge is acquired and problems approached. There are pedagogical reasons which point in the same

direction as the practical one, towards "theme" teaching and area studies. It would be wrong to give the impression that such pressures are only found in lower secondary schools; the curricula of many of the new institutions of higher education (Sussex in the U.K., Konstanz in Germany) have in part been breaking down narrow specialisation into broad areas of enquiry and interest.

(iii) The concept of the timetable. The traditional school day has been broken down into a set of fairly short periods, their actual length varying with the age of the pupil etc. Such a system is incompatible with theme teaching, which does not lend itself to neat timetable packages. Nor does the idea of a class sub-divided into groups or individualised programmes fit into the traditional timetable situation. Therefore, several variants are already evolving: one is the idea of the integrated day, the other the idea of team or co-operative teaching. The former relates to the way a day, week or term is planned; the amount of time ceases to be the period, but a longer unit (i.e. a day, a week, a term). A programme is worked out for that time period; sometimes for individual pupils, sometimes groups within a class, sometimes a class, sometimes classes together. Team teaching is a device which can make this possible, namely groups of teachers joining together and planning jointly the course to be followed for several traditional classes of pupils. Such a technique is essential if area studies at a sophisticated level are to be achieved and, further, if the specialist skills of teachers in short supply are to be available to a maximum number of pupils.

29. These three changes add up to a revolution in the internal structuring of the school situation, and in the relationship between teacher and pupils. Added together, they mean that the notion of subject, class syllabus and teachers, undergoes considerable modification. The argument is that, for a mixture of the practical and theoretical reasons touched upon earlier, these changes will become increasingly apparent throughout the secondary school system. It is within such a changed system that the role of complex educational technology - especially educational television and computer-assisted learning - becomes significant. These give the staff of schools the means of providing both the specialist support (e.g. closed circuit T.V.) and the individualised programme (e.g. computer-assisted learning) that are some of the new objectives of the educational system.

CHAPTER IV

STRUCTURAL DIFFERENTIATION OF SECONDARY AND HIGHER EDUCATION

30. A distinction has already been implied between the differentiations by type of institution, for example a parallel system of secondary education and the existence of a variety of type of higher education institutions, and differentiations within an institution in terms, for instance, of the courses or subjects being followed and between the abilities of pupils and students within the institution.

(1) Differentiation between Institutions of Secondary and Higher Education

31. It is in the first of these levels that there is perhaps the greatest contrast in tendencies between higher and secondary education. Within secondary education there is a widespread movement away from systems of differentiation between institutions (the parallel system), towards common or comprehensive school structures. By contrast, within higher education a reverse tendency seems to be operating towards the creation of a more differentiated system of education with greater variety of type of institution. Neither of these trends is universal: in Austria, for example, there is currently no movement towards comprehensive schooling, rather parallel schools will continue but greater opportunity will be given for pupil transfer between school types, etc. In the U.K. there is pressure to bring a highly differentiated structure of higher education - with universities, colleges of education, colleges of technology, polytechnics, as well as a plethora of institutions of further and higher education - into a less differentiated binary system. And some argue in favour of a unitary system, the polyversities. For example, one of the recommendations of the Robbins Committee was the development of a unitary system of administration of British higher education. However, despite these examples, the tendency in most countries seems to be towards the development of undifferentiated secondary school systems and more differentiated higher educational ones.

32. In Western Europe there is already considerable evidence to support the first of these propositions. In Norway and Sweden all schooling will be comprehensive up to and including the 9th grade (until age 16). Further, the Swedish authorities have incorporated the three types of gymnasium (academic, technical, commercial) into a single system, and they and the Norwegian authorities are discussing the integration of the various types of upper secondary school

(gymnasium, fackskola, continuation school, plus a variety of types of vocational studies). Parts of both Germany and the U.K. already have a comprehensive system, but in such decentralised systems of educational administration it is difficult to generalise. However, in 1965 the U.K. Department of Education and Science instructed local authorities to submit plans for their reorganisation of secondary schooling into a comprehensive system. It is even possible that legislation will be forthcoming within the next 2 years compelling authorities to undertake such reorganisation. This will not necessarily mean a uniform system of secondary schooling throughout England and Wales, because the Department listed four main varieties of comprehensive schools:

(a) For pupils aged 11-18 years, "all-in comprehensive", covering the whole of secondary schooling;

(b) For pupils aged 11-16 years, schools with 6th form colleges - i.e. a split at the end of "ordinary" level and transfer to a specialist institution for "advanced" level work (a 6th form college);

(c) A two-tier system of schools for pupils aged 11-14 years, with transfer to schools preparing for "O" and "A" level work (the Leicestershire system). Under such a system pupils who wished to continue at school after the end of the compulsory period (aged 15+) would move on to a further school;

(d) A system of middle schools which would continue upper primary and lower secondary education with transfer to all-age comprehensive schools at age 12 or 13.

These are not hypothetical examples but represent the variety of type of structures that exist, not only in the U.K. but throughout Western Europe. It is almost certainly better to discuss comprehensive reorganisations of lower secondary school systems (e.g. the CEG in France, the "scucla media" in Italy and the 9-year common school in Sweden and Norway) quite separately from the upper secondary systems, and the totally reorganised systems (e.g. the one model in England and Wales for pupils aged 11-18 years, and the U.S. high school). There is, therefore, a strong trend discernable in Western Europe towards the elimination of parallel systems (e.g. the German Gymnasium, Haupt and Realschule, the French Lycée, CEG and CES, and the British grammar, secondary modern and secondary technical schools), towards a system where all courses are offered within a single school type which all young people attend.

33. The reasons behind these trends are multiple, and can be categorised under the two words used earlier: the practical and theoretical. The practical argument stems from the expansion in enrolments; if the age of compulsory schooling is to be increased, and if voluntary staying on rates increase further, most countries have or will have the majority of their 16-18 year olds in school. Why, then, in separate institutions? Allied to this is the pressure - both social and economic - for the educational experiences of all adolescents to be the same for as long as possible. When pupils were leaving school at different ages and undertaking different courses, parallel systems made some sense. Where this is no longer the situation, they make little educational sense. Allied to these practical points are a series of theoretical ones, all of which are related to the objectives of the system. Several are common to most systems - ensuring equality of opportunity, maximisation of the utilization of human talent, enabling all youngsters to develop to the full their potentialities and capacities. These are objectives that most educational systems would applaud. The theoretical argument is that they can only be achieved in a common school system. Parallel systems imply choice and selection; if this is done early then talents cannot be assessed and potentialities realised. Early selection becomes rigid selection if it is followed - as it usually has been - by qualitatively different educational experiences. What secondary school reorganisation is trying to achieve is the postponement of the time when such decisions have to be made, ensuring that they do not result in different types of education and so become virtually irreversible. It is for these types of reasons that the introduction of common lower secondary schooling has become more widespread in recent years.

34. However, the tendency in higher education is the reverse: here, in many countries the pressure is to introduce greater differentiation into the system of higher education. This is taking a variety of forms, of which three are the most significant:

(a) Special courses or cycles, usually of shorter duration, are created or developed within the university leading to a terminal degree generally considered below the traditional university terminal degree level. These courses sometimes have a further characteristic of close vocational relationships, especially when compared with the traditional university course. Another development taking place within universities concerns countries, and fields of study, where in the past only one type of degree was awarded after a relatively long period of study. In these cases, two or three cycles were created with a corresponding differentiation of degrees. Thus, for example, German speaking

universities in Switzerland, where so far the only terminal degree has been the doctorate, have introduced the "licence" as a first terminal degree. A similar differentiation has been introduced in Austria and Germany ("Magister") and is currently under discussion in Italy. In fact, this trend implies a greater differentiation between undergraduate and post-graduate studies.

(b) New institutions are created and developed outside the existing universities. This is not the creation of new universities, but of para-university level institutions in addition to the traditional ones. A good example are the French "Instituts Universitaires de Technologie" (IUT), as well as the Norwegian "District Colleges". In the U.K. after the Robbins Report, Colleges of Advanced Technology were transformed into universities and, since that time, polytechnics provide further examples of either the development or creation of new types of higher education institutions. In this context a distinction should be drawn between attempts to develop special and prestigeful institutions within a mass system (e.g. the Centre of Excellence) and attempts to achieve a mass system by developing a level of higher education carrying lower status than traditional universities (for example, junior colleges in the U.S. and new types of polytechnics in the U.K.).

(c) Institutions which in the past have operated on a secondary level were up-graded - or are being upgraded - into institutions of higher education. One example stands out: the situation of teacher-training in most countries. Training of primary school teachers in particular was in many countries a part of secondary schooling - in fact the graduates of the system were sometimes considered the equivalent of secondary school graduates for university entry purposes. Many systems are now attempting to give teacher-training parity of prestige with higher education and recruit into it graduates of the academic secondary school system. The contrast with the traditional status given to the graduate of the teacher-training institutions was roughly the same as the graduate from academic secondary schools. Again the motivation is multiple. It is clearly a way of providing higher educational facilities for the swollen numbers of secondary school graduates; in turn, it may well be a way of both raising the status of the teacher and

obtaining better-qualified entrants to the system of teacher-training. How far it will be successful in either of these points is a question for the future. Although teacher-training provides the clearest examples, many specialist institutions concerned with professional training, especially of engineers and technologists, are experiencing similar up-grading as a result of political decisions and economic pressures.

35. It must be admitted that these three broad types of strategies do not exhaust the possibilities and, more important, they tend to overlap. Perhaps the best illustration of this "blurring" is the American junior college system, which could certainly be considered as an example of the first two types of strategy, and was also designed to achieve some of the objectives of the third (i.e. give higher education to the increased and increasing proportion of the age group, without immediately expanding universities). In addition, it serves as something of a "cautionary tale". It is designed to give a shorter, non-university type of education, with possibilities for some of its graduates to transfer to university. And there seems little doubt that a large proportion of entrants do aspire to higher education; but the drop-out rate in junior colleges is high - perhaps two-thirds of entrants; for half the remainder of entrants the education is terminal, and the other half enter universities. A further example of an overlap is the "Open University" in the U.K. - a new institution using mass media methods of instruction has been developed to cater both for students of the traditional age group for entry to higher education and the older population who were denied access to higher education during their late adolescence and early adulthood.

36. It seems, therefore, that the general tendency is towards less differentiation between types of secondary schools, and more differentiation in the system of higher education. This apparently paradoxical situation can be resolved fairly simply: both systems are responding to similar sorts of pressures, but the initial systems were markedly different. The secondary school systems were highly differentiated with high status given to the academic schools - gymnasium, lycée, grammar school - both because of the characteristics of their entrants (a mixture of intellectual and social elitism) and the chances offered by this type of education (entry to universities and occupations carrying relatively high prestige and rewards). This parallel system was unable to withstand the pressures of a movement towards mass involvement in secondary schooling, with a socio-political objective of encouraging the involvement for economic (maximizing the use of talent) and social justice (equality of opportunity) reasons. The very nature of the differentiated system acted as a bottle-neck in mass involvement. By restricting right of entry, and providing different types of courses, later

re-entry to the "academic" line was difficult. Higher education provides a contrasting example: the policy strategy to break the stranglehold of an elitist university system was not for universities to take over the system, but to create counterveiling opportunities in parallel institutions. A variety of justifications can be given for this alternative strategy. Not least important are various resource arguments: in most countries university education is both lengthy - to obtain a degree may take 6-8 years and often much longer; the drop-out rate is very high; and much of what is taught has little relevance to the employment situations graduates will enter. This contrasts markedly with the other institutions, the training in which is shorter, much more vocationally oriented, and has a lower rate of attrition. Hence a strong case can be made for expanding the parallel system - especially when the newly created institutions are much more directly under the "control" of the sponsoring ministry.

37. There is, however, another likely influence: the interest of universities is probably too great, and the forces resistant to change too strong, for the system itself to be taken over and re-organised. Furthermore, the social pressures for the expansion and re-organisation of secondary education are possibly far stronger at the moment than those for re-organising higher education. This may well be a contributory factor to the different policy strategy. But a question can be asked: will similar pressures arise for the re-organisation of higher education to those that have arisen for secondary? Will the creation of parallel structures for the first years of higher education be a temporary expedient which renewed pressure of numbers in the 1970's and 1980's will find inadequate? In a sense, the types of pressures now bringing together parallel systems of secondary schooling, developed during the 19th and early 20th century into "comprehensive" systems, may well be experienced by the parallel system of higher education evolving in many countries. Certainly one system which has a more highly developed parallel system of higher education - the U.K. - is already experiencing pressures towards "comprehensivation" of structures.

(2) Structural Differentiation within Institutions of Secondary and Higher Education

38. The second level on which differentiation can be discussed is within particular institutions. This type of differentiation is of two types, which in the real world overlap:

(a) differentiation by pupil's ability - i.e. streaming

(b) differentiation by course or lines taken - i.e. by subject.

Traditionally in selective secondary schooling there has been an assumed correlation between the two (e.g. pupils taking the

academic lines were assumed to be intellectually the most able). But the two must be kept separate for the purposes of the current discussion. The practical problem is most acutely felt in secondary schooling - namely, how far the problems generated by a parallel system of schooling (i.e. differentiation between institutions) will be re-created within a comprehensive structure by a system of differentiation within the school (according to pupil's abilities and/or subjects taken).

39. In view of the "theoretical" justifications given for this type of re-organisation - for example, equality of educational opportunity and maximal utilization of talent - the question arises of how far these will be vitiated by parallel ability or subject streams within an institution. British experience with ability streaming in primary schools indicates how far it becomes an intellectually self-fulfilling system, and also how it is intimately connected with class origin of pupils. The existence in the American high school system of academic courses (leading to university), and vocational courses (not usually leading to higher education), provides evidence both about how quickly subject differentiation becomes associated with class and ethnic differences, and how hard this is to modify once established. Recent Swedish experience is also relevant here: the re-organised 8th and 9th grades of the comprehensive school were differentiated into nine courses, some theoretical, some practical. The decision about courses to be followed was left to the pupil and his parents. As was mentioned earlier, the majority chose the theoretical lines that led on to the gymnasium. In a society like Sweden, given choice, people opt for the academic line, which is both status conferring and leaves all opportunities broadly open. No doors are closed. Basically the Swedish curriculum is evolving into a common academic type until at least mid-adolescence.

40. This leads on to the basic question: how far can re-organisation and re-structuring go? American and British experience suggests difficulties of reforming only part of the system, namely re-organising the external structure of schools without changing the internal organisation of the school. Simply having a common school may not achieve the objective of wider and more equal educational participation; it may merely mean the re-introduction of all inequalities in a disguised form as a result of the system of internal differentiation of the curriculum. Swedish practice indicates one possible consequence of genuine common schooling and the problems it generates for the next stage of education, namely can all the graduates from the re-structured stage - in both external and internal senses - who wish to transfer to the next stage be absorbed? In the Swedish case this involves transfer to upper secondary, but the same point could be made for higher education. Two types of restraints may limit this:

(a) Resource restraints. Have we the educational resources, especially specialist manpower, to absorb these numbers and provide them with a level of education similar in quality to the traditional provision?

(b) Intellectual restraint. Have the growing numbers of applicants the intellectual ability and motivation to benefit from the level of education (academic, secondary and higher) they wish to enter?

41. Both of these are essentially quality controls: in the first case the quality of the educational experience being provided and in the second the quality of the recipient to benefit from the educational experience. The conservative answer to these questions is straightforward: we have neither the resources nor the human talent for unlimited expansion of enrolments. Re-organisation either within or between educational institutions should only go as far as human and economic resources permit. The radical answer to this is more complex: economic resources are clearly limited in the short-run and the radical can only hope this is a temporary phenomenon that can be alleviated by re-structuring the priorities of government expenditure. As far as pupil's abilities are concerned, the radical can cite the precedent that the wealth of human talent has not run out with partial expansion of enrolments, and experience suggests a complex relationship between educational standards and increases in enrolments.

42. In the near future these are problems that will be felt more acutely by the secondary education system than the higher. But it is possible that this is merely a question of time. The combined effect of numerical expansion, political pressure towards equalisation of opportunity and experience, and the knowledge explosion, may result in similar influence being significant for at least the early years of higher education by the end of the century. Because of this it is worth looking at the various overlapping ways in which institutions can be internally differentiated:

(a) Differentiation by ability - this is the division between a population according to intellectual ability and performance; dividing intellectually heterogeneous population into its relatively homogeneous sub-groups.

(b) Differentiation by types of subjects - this is a division into broad types of discipline: the academic, the general, the vocational; pupils in different classes taking different subjects and/or similar subjects at different speeds, to different levels or in different ways.

(c) Differentiation by particular groups of subjects - here the differentiation is into different subject grouping (arts or sciences, languages or social studies, technology or natural sciences) which can be taken as part of an academic, vocational or general course, to any particular level.

43. The question facing current and future educational policy is at what age will what type of differentiation be introduced into the educational institutions, and to what extent can any decisions taken by an individual be later reversed by him? Further, on what types of information will these decisions be based, and who will make them? Traditionally in both higher and secondary education these three types of differentiation were used to demarcate different types of educational institutions. The structural reform (i.e. external to the institution) that has been called "comprehensive" education has brought together different types of pupils and students into a single institution. But simply changing the structure of an educational system (i.e. external differentiation) may not produce more common schooling, and therefore more equal educational participation, if no changes are made in the way the school/university is internally differentiated. A comprehensive school system that streams pupils into particular lines and subject groups at a relatively early age can be just as rigid as a parallel system of education. But, against this, a system that does not differentiate on the basis of one or other of these principles runs the risk of creating a demand for education that far outstrips the resource capacity of the education system and the economy. The additional risk - but here evidence is scanty and contradictory - is a deterioration in educational standards as a result of student-pupil population lacking either the intellectual ability or motivation to benefit from the course, or a lowering in the standards of the course to allow for lower intellectual-motivational levels of the student population.

44. There are two theoretical types of restraints on undifferentiated structures, in addition to the practical ones of the resistances to change: the economic (resources available and labour market absorption capacity) and the intellectual (the ability and motivation of the population). What is clear is that the gradual elimination of differentiation between institutions will make the question of differentiation within them more significant. The trend at the moment is towards the postponement of differentiation and specialisation as late as is practically possible in secondary schooling. In fact, even at the level of higher education, pressures exist to encourage the general or multi-disciplinary sides of many subjects rather than concentration on certain subject specialisations, and to encourage broad general education. Witness the types of curriculum changes asked for during the student demonstrations in countries as far apart as the U.S.A., Japan, the Netherlands, Germany, France and the U.K., and the

increasing emphasis on foundation years of general education in the first years of higher education in American liberal-arts colleges, and new universities in the U.K. and Germany.

45. Several things are already clear about current trends in the nature of differentiation in secondary schools:

(a) With the movement towards wider participation in lower secondary education, the more popular options are those which traditionally lead to upper secondary and higher education. Swedish experience with the 9-year comprehensive school and the United States high school programme also point to the popularity of the "academic" courses, and, despite certain pressures to discourage examination bias in secondary schools, the rapid growth in pupils attempting "Ordinary" level and Certificate of Secondary Education examinations in the U.K. is a further pointer in the same direction.

(b) New types of educational methods: both sophisticated types of educational technology like computer-assisted learning and programmed methods of instruction, and new ways of re-structuring the classroom, such as family grouping and team teaching, enable the teaching of mixed ability groups in such a way that the less able pupil has an advantage and the performance of the more able does not suffer. Studies of streaming in the U.K., the Swedish study of comprehensive compared with parallel 6th-9th grades, the Coleman report on educational opportunities in the U.S.A., all suggest that teaching in mixed ability groups helps the average and below average pupils and does not hinder the educational development of the able pupil. Further, most of this experience was gained without utilising the potentiality of educational technology for individualised instruction and self-directed learning, and in systems in which the re-structuring of the classroom situation to meet mixed ability teaching was fairly elementary.

(c) But the problem remains: for how long can such "common" schooling be continued without -

(i) holding back the able pupil,

(ii) putting undue strain or stress on the less able pupil,

(iii) creating unrealistic intellectual-vocational aspirations in the sense that the educational system cannot absorb them, the labour market does not require their training, and the individual lacks the intellectual ability to benefit from the educational experience he is motivated towards?

(d) Of the various types of internal differentiation the one that is least objectionable educationally (i.e. does not become self-fulfilling) are forms of differentiation within the teaching situation by speed of programme through similar subjects or subject groupings. Other types of differentiation, by lines, by classes, etc., create the difficulty of later transfer between lines and classes analogous to transfer between parallel school systems.

(e) To some extent the problems of transfer (i.e. keeping options open), and of teaching mixed ability groups without harming the individuals, may be temporary ones. If genuine "individualised" programmes of instruction designed for kthe intellectual capacity, motivation, and stage of development of the individual become an educational reality, then individualised "conversions" and second chance courses can enable later transfer. However, such individualised programmes are not now available, and will only cover part of the educational experience of pupils and students. Such education results in a group or co-education experience and, in addition, many areas of the curriculum are concerned with underlying attitudes and orientations and, as such, may have limited use for educational technology.

(f) There are several additional points related to the problem of standards implied in points (i) and (ii):

(i) The question of the social-political and educational development of the able, the average, and the below average pupil. If, for example, it could be shown that by postponing differentiation the educational development of the able pupil is inhibited, would this be an overwhelming argument in favour of differentiation? Further, if it could also be shown that by differentiation the educational development of the less able was held back, how would this affect the policy decision? Here is an hypothetical educational policy choice, implying that there are <u>different</u> educational objectives, and that these objectives may imply different educational structures. In the case implied by the example above, a similar total output of the system can be obtained by maximising the gains of different types of pupils; the policy decision is which of these alternatives is socially, politically and economically the more beneficial.

(ii) An alternative position is to state that it does not matter in a wealthy society if the educational development of the able is held back, simply because at the next stage of education - upper secondary or under-graduate or post-graduate schools - the individual can go on developing to his/her maximal

potential. This point clearly assumes that the society is a wealthy one and that able pupils will be retained (i.e. they will not drop out because of frustration or indifference towards education as a result of being held back). But if this position is correct, then the policy alternative of the advances of the above average and below average may be unreal.

(iii) One theory of learning suggests that the differences between able/less able children is not the subjects they can attempt, nor the levels of performance that can be reached, but the speed at which they reach certain levels. If the speed of progress is the determinant of ability, and there are available "individualised" programmes, then the dilemmas posed in (i) are not educationally significant. This is because with greater effort and more resources most people, at least at a secondary level, are capable of meeting traditional demands. The only restraints on this are the availability of "individualised" programmes, i.e. whether they exist (have they been developed?) and whether resources are available to obtain them (can we afford them?).

46. The bulk of this analysis is directly relevant to current changes in secondary schooling. Its relevance for higher education is less immediate but still significant:

(a) The various levels of education are inter-dependent, the future of higher education being to no small extent dependent upon the numbers of entrants from secondary schooling and the style of education they receive. Therefore, the way the secondary school system is designed to meet the points implied in this analysis will directly influence the future size of the student body, and the shape and content of higher education, both in the sense of subject-matter and teaching methods.

(b) However, to see the higher education system as simply responding to pressures from other sectors of the educational system is to over-simplify the situation. Many of the pressures outlined above are experienced directly by the system of higher education. For example, the expansion in knowledge - partly created by the research activity of the university system - clearly has implications for what is taught and how (the curriculum) of the system of higher education; as does the question of the relevance of specialist, academic-type education to the lives (economic and social) of the students in the system. Furthermore, specific attempts are being made to re-group subject discipline within the higher education system to meet

changing views of what is intellectually desirable. Also, the problem of relationships between various types of institutions, transfer possibilities between them, and comparability of courses, does at the moment concern university administration and teachers as well as their counterparts in secondary schooling. Of particular importance here is the problem of students in the "wrong" course or institution and the possibilities of transfer - the question of flexibility discussed earlier.

47. But the fact that higher education is inter-dependent with secondary education, and is already responding to pressures from this sector of education and the wider society, should not lead to the conclusion that similar patterns will necessarily emerge in secondary and higher education. Functional differencesexist between the two levels of education and these will continue to exert an influence on the external and internal differentiation of the system. As far as higher education is concerned, two inter-related functional points are of paramount significance: the complex relationship between research and teaching, and the need for specialist knowledge and training. The essential activity of primary-secondary education is the transmission of knowledge and culture, whereas higher education is concerned with the advancement of knowledge. The research side of higher education is bound to place a limitation upon the structure and content of higher education, and how far certain innovations in secondary education will extend into higher education. A further important consequence of this is the implications for the relative cost of higher and secondary education. Allied to the "research" activity is the point that university studies tend to be specialist in the sense that the students concentrate upon a narrow area of interest. This is partly because of the research orientation of higher education, and partly the specific training being given in the institution as direct preparation for a particular job. Clearly, the second point influences some faculties (medicine, business training) more than others (languages, history), but even in the second there can be a heavily vocational content in both secondary and higher education, in the sense of preparing students for an academic career. These points are not meant to suggest that pressures from secondary schooling and from other areas will be ignored by higher education, but merely that their structural resolutions may differ between secondary and higher education.

CHAPTER V

CONTROL OVER THE SYSTEM

48. The problem of "control" over the educational system and its constituent parts stems from three separate factors:

(a) the resource problems - i.e. the growing expense of educational systems brings with it the need for control over expenditure, more effective use of existing resources as well as the creation of new resources and new utilisation;

(b) the complexity problem - i.e. the increase in the scale of educational institutions (universities of ten thousand students and schools of several thousand pupils) plus the use in administration and teaching of complex educational objectives (individualisation of student programmes), means that administering the system and its parts is an increasingly complex, delicate and important task; and

(c) the representation-participation problem - i.e. the demand from the pupil-student body that they should be involved in the decision-making and policy-formulation processes both of the individual institution and the system as a whole.

49. The dramatic growth in education is commonplace. Annual increases in expenditure of 10% per annum have been achieved in many countries - and have often been sustained for several years. There are three separate types of reasons for these increases:

(a) The expansion in numbers as the result of the combined effect of demographic factors and wider educational participation.

(b) The levels of education that have been expanding have tended to be the more expensive types (e.g. higher education compared with secondary, secondary compared with primary). Furthermore, in certain systems - but by no means all - the technical-vocational and the scientific sides of secondary-higher education have been expanded at a faster rate than the humanities. With their heavy emphasis upon laboratories etc., capital expenditure on the former is inevitably greater than on the latter.

(c) In addition, systems have attempted various types of qualitative improvement and this has inevitably meant additional expenditure. In part this is the capital

cost of replacing buildings, and in part efforts to both improve the status of teachers and achieve an improved staff-student ratio. Efforts to equalise conditions between various levels of education are also significant, especially between primary and secondary schooling. For many systems this equalisation of treatment between levels of education has been the biggest single contribution to rising expenditure.

50. All three types of improvement have frequently taken place simultaneously. As a result, educational budgets have soared. The practical question is how long they can continue to grow, and grow at rates that outstrip other spheres of national expenditure and national income. However, the central point is that the increased (and increasing) cost of education, plus the increasing role of the central government in the financing of all stages of education, must generate both new ways of examining the system and its performance. Not least important of these will be the utilisation of systems analysis, cost-benefit techniques, and programme-budgeting. One aspect of the administration of the system is the need for better information about its functioning. The shift in the unit of data collection from the institution (the school, the college, the university) to the individual pupil-student is of particular significance in this context. This is the movement towards individualised data collection procedures. The method of doing this is the use of mechanised means of data processing, storage and retrieval. But the need for such procedures stems from the requirements for both more information and more detailed information about the system. Partly this is to answer more accurately and quickly traditional administrative questions, but more significant is the range of new questions that stem from the economic need to examine more critically the cost and effectiveness of the educational system. Finally, new tools of manpower forecasting have been developed and, with them, a new type of educational administration - the educational planners and the new planning departments.

51. Administration of the system has to be considered on a further level - the administration of individual educational institutions. Inevitably, on both secondary and higher levels these have increased in scale - growth in total enrolments has been accompanied by growth in the size of individual institutions. Administration has been made more complex by curriculum changes, such as its individualisation of courses - so that timetables become, for example, pupil-based rather than class- or course-based; and the introduction into the system of people other than teachers, for example, guidance workers, counsellors and educational psychologists. Furthermore, the utilisation of complex educational technology - closed circuit television, the use of computer-assisted learning and language laboratories - has not only introduced new specialities into the system, but made resources management

on a local level a more important skill. As a result, educational administration, on a national and local level, becomes a speciality as important to effective functioning of the system as traditional teaching skills. In turn, the education of administrators will become a crucial part of the system, and what some have termed the "bureaucratisation" of the system, with its attendant costs, will become a phenomenon of education.

52. It is this process of "bureaucratisation" that has recently high-lighted the third level of control over the system, namely the insistence from students (and increasingly from secondary school pupils) that they have a right to influence the educational system nationally, regionally and, above all, locally. The social factors beneath this student activism are multiple. In part they reflect inadequacies in the existing system - overcrowded universities, poor facilities, inadequate teaching and irrelevant curriculum - and these partly stem from the rapid expansion of enrolments. No less important is the emergence of new types of students who come from social backgrounds in which prolonged education is a new experience and who often do not accept the traditional values of the system and the hierarchy that reflects these values. Allied to this, much of the criticism is not merely about the educational system, but about characteristics of the wider society which the educational system mirrors.

53. One way in which this challenge has been manifested is a demand for representation of students in the decision-making procedures. For some this is representation <u>from</u>, i.e. students have the right to express opinions about educational matters and these opinions should be listened to; for others it is representation <u>on</u>, i.e. students should have representatives actually sitting on Boards of Governors, faculty committees, etc. Further, this is not an either/or situation - many institutions would grant the right for representation on certain administrative committees (involving student facilities, or where students views were thought important), while denying representation on other committees (staff appointments, promotions, examining boards, etc). Parallel with this, the right to representation "from" students can be granted for certain activities while the right to representation "on" decision-making bodies can be denied. One example of this might well be discussions about the content of courses, appropriate teaching and examining methods. These are all examples of the way the "representational" argument has been developed. In higher education one result is to challenge not merely the traditional governors of institutions but the ways it is structured into departments, faculties and schools. The challenge is not simply to the traditional hierarchy (rule by professors) but to the way this is structured within the university.

54. However, representation is only part of the current debate. Another issue has recently been aired, this time not representation on or from but participation in decision-making. Again, this argument is not confined to educational institutions but also applied equally to other institutions in society. Here the central argument is against simple representation and for general participation in the debates about educational matters. Ideas like the general assembly take the place of a university committee structure, and universal participation is the substitute for representative democracy. The areas which such general assemblies should decide are catholic and often all-embracing; traditional student affairs and concerns like grants, dormitories, student health services, etc., are only part (and a small part) of the activities; more essential educational matters, like curriculum, appointments and general educational policy should be determined by such a participatory body. But the key point for the present purpose is not the way in which such demands will finally be met, it is the relationship between these demands and the growth in size and complexity of the system, the recruitment to it of new skills (administrators), and the entry of more and new types of students - new as much in their maturity, political and social sophistication as in their social origins.

CHAPTER VI

ROLE OF EDUCATIONAL AND SOCIAL CHANGE

55. At the outset it was suggested that the educational system responds to pressures generated by other institutions in society (economic, political, cultural). What is taught, to whom and by what means, is to some extent a function of demands made from outside the system. In these senses educational systems are responsive to external pressures. But the system itself can generate change for itself: one of the influences on the "nature" of education are the pedagogical principles and interests of the system and its labour force. Perhaps more important for the present purpose is the use of the educational system as a means for social and economic change. The clearest example of this is the attempt to utilise educational systems to train manpower on all levels of skill in order to create the necessary conditions for economic growth and development. Akin to this is the role of education - especially the research function of higher education - as a means of developing new skills, new techniques and new ideas that are economically viable.

56. A striking political feature of recent policy discussions about education has been the stress placed upon education as an institution that creates the conditions for

economic change and development. It would be incorrect to argue that, prior to the 1950-60's, propagandists were unaware of the "economic" importance of a trained labour force, this argument being as old as state participation in education; what characterises the contemporary discussions is both the salience given to it and the extent to which it is assumed to be either self-evident or empirically demonstrated. Part of the conventional wisdom of the 1960's is the belief that education is a means of achieving affluence in under-developed societies and a way of maintaining it in highly developed ones. It is both surprising and disturbing to see the limited literature on the "economics of education" and how indeterminate its results. In part this is because the literature is of mixed quality and intentions: descriptive studies of national needs, plans and intention; attempts to correlate educational experiences and job placement; as well as analytical studies of the correlation of education, job performance and economic growth. However, the intrinsic difficulty of both describing and explaining the relationship between two such complex empirical entities as the education system and economic performance goes far to explain why current theories are so speculative and tentative.

57. Nevertheless, significant work on the economics of education has been attempted. The most general example is the effort to relate economic aspirations to educational needs; the intermediatary between the two being manpower planning. In these, the empirical relationship between education (or training) and economic growth is either asserted or assumed. What is attempted is to translate economic objectives into manpower needs and relate them to educational output. Normally, the relationship between the two steps in the argument (economic growth and manpower : and manpower and training) are taken to be self-evident or not requiring detailed description or analytical consideration.

58. The empirical basis for such confidence is given by three types of research:

(a) Describing the empirical relationship between either educational experience and occupational position - for example showing the relationship between job and length of education. An alternative is relating earning power to educational experience, and showing the pay-off (both personal and, by implication, national) of prolonged education.

(b) Correlational studies between economic development and growth, and various indicators of educational development - enrolment rates at various levels of education, and the proportion of the labour force in highly skilled types of employment.

(c) Detailed case studies of the historical development of an economy, trying to demonstrate the role (in historical terms, and the contribution in statistical terms) of education to that growth. Perhaps the most celebrated example of this is the "residual" approach used by Denison in his study of the American economy growth in the second quarter of this century.

59. Criticism of such approaches and their findings abound. For example, how far the earning potential of a college degree is a function of the skills derived from that experience, and how far it is a function of either a conventional social evaluation or sheer scarcity of numbers of graduates, is a criticism of the first approach; as is the discussion that questions the relevance of experience from a system of education that has minority participation to one that has mass participation. Both individual and communal pay-offs of education in these systems may differ widely. In the same way, studies of the technological gap highlight the inadequacy of seeing educational development as the crucial variable in economic development amongst fairly homogenous groups in societies. Parallel with this, the relevance - and therefore the usefulness - of many types of educational developments (both mass literacy campaigns and traditional types of elitist academic education) has been questioned by students of under-developed countries. The general problem of much of this analysis is that it has been too macroscopic on both the educational and economic development sides of the equation. If education has a contribution to make to economic development it will be found by analysing what types of education (types of academic, vocational, general) are related to what levels of job performance and to changes in what sector of the economy; in other words, it is closely related to manpower training, utilisation and planning on a micro-level.

60. In principle, education can be treated as both a consumption and an investment. But careful micro-research is necessary to demonstrate which it is, and in what context. So, perhaps because of the difficulty of doing this, economic analysis of education has tended to shift its attention from the problem implied above to economic studies of the educational system itself. Here different types of questions are asked, questions about "cost" of the system, its "efficiency" and the relative effectiveness of different types of education (e.g. comparative cost-benefit studies of training in different types of educational situations). Acceptance of these points does not mean that there is no investment benefit from education. Personal economic advantages can be gained from prolonged education when few people complete this level of education and when there is a substantial demand (for economic or other reasons) for this skill. However, the relevance of such assertions and documentation for a system

of mass enrolment is being questioned. Similarly, specific vocational and technical training may heighten the economic effectiveness of the labour force and therefore aid economic growth. But this is a more detailed point than is normally made, and may have little similarity with the contribution of sustained general-academic education. Empirically the question must be shifted from discussion of education and economic growth into analysis of what types of education affect economic growth and in what types of social contexts. Further, clear separation must be made between individual pay-off and collective gains. Some types of education may enhance the earning potential of the individuals but have little to contribute to general economic developments.

61. Discussions about the "creative" role of education have not been limited to its potentiality as a means of generating the conditions for economic change; a second creative role is the more general objective of social change. Perhaps the most widely discussed example of this is the social objective of equality of opportunity in society and, because of an assumed empirical link between education and occupation, equality of access to and participation in education. Related to this objective is the use of the educational system as a means of social reform. In the United Kingdom, the Plowden Committee advocated the use of the educational system as a means of funnelling resources into decayed and decaying urban centres, and the school as a means of re-vitalising such communities. Similar projects have been initiated in the U.S., both through federal projects like "head-start" and privately founded attempts to develop "community schools".

62. Both of these are examples of viewing the educational system (or an individual school) as means of social engineering. The empirical problem is how far it has been, or can be, effective. A previous chapter has shown how much - or rather how little - equalisation of opportunity has occured through education in societies like the U.S., Sweden and the U.K., which have accepted equalisation as a social and educational objective. Before taking this discussion further the distinction between individual and collective gains made earlier is worth repeating. It is possible to argue that, although education may not be an effective means of achieving general equality of opportunity or generating the conditions for macro-communal change, it may be a means of social advance and improvement for a small number of individuals. The importance of this distinction is considerable: the fact of individual mobility through education does not prove equality of educational opportunity - although it might indicate some equalisation of opportunity. Nor does proving the inadequacy of education as a means of macro-change lead to the conclusion that education is not a potent force and means for individual advance: a section of the community can derive enormous benefit from education, without fundamentally changing the inequalities in society.

63. What experience and research over the past twenty years has shown is that, although individuals can and do become mobile through education, all systems are still far from achieving equality of admission to, and performance in, the later stages of secondary and higher education. Further, despite massive increases in enrolments in upper secondary and higher education, there is little evidence that these have done much even to narrow inequalities in educational participation. Finally, and most depressing, these inequalities have been resistant to special policies designed to narrow them - both resource allocation, like student grants, and special curriculum-method changes. The documentation for this has been given earlier; all that is necessary here is to state some of the conclusions that can be drawn.

(a) The Limited Role Education can Play in Macro-social Change

64. This argument has two related complex elements, not all the critics of the role of education necessarily agreeing with both sets of arguments:

(i) That pupil performance in the system is in part - and many would argue in large part - a function of what the pupil-student brings to the system, not what the system provides. Effective performance at any stage of education is the result of some genetic influences ("intelligence"), some affective-motivational factors (acquired to no small extent at home and as much in the community as at school), and cognitive skills (some of which are, again, the result of experiences both outside education and prior to formal schooling). Because of the importance of such factors as early life experience and the continuing role of motivational factors throughout schooling, the extent to which educational systems can either compensate for or compete with such influences is severely restricted. Even if participation in schooling is universal (i.e. during the period of compulsory schooling), actual performance reflects influences external to the school, as does transition to the next stage of education. The result is that education enrolments tend to reflect social differences, and may even reinforce them. In essence these arguments stress the social context or structure within which the educational system functions.

(ii) That concepts like "equality of opportunity" must be placed into a context, and in industrial societies the critical determinant of that context is the structure of the labour market. The economy imposes two broad types of restraints: one is the resources that can be allocated to education, and the other is the employment opportunities it can offer. It is the second that is of central concern at the moment: although education may be a thing of intrinsic value, it is also in complex

societies a means of occupational training and/or selection. Further, prestigeful and high income jobs are relatively scarce, and numbers are limited by the structure of the economy; "education" may influence who enters them, and even performance in them, but it cannot affect how many such positions there are (except for the number of teaching jobs, and presumably even these are limited by resource restraints). This argument stresses the economic (or occupational context) within which the educational system functions.

Taken together these arguments suggest that performance in the system is affected by attitudinal and motivational factors outside the system's control. Further, the opportunities afforded by the system are limited by the occupational structure offered by the economy. The second factor is that of opportunity inhibition, the first factor is that of performance inhibition, both limiting the extent to which education can be a "creative" force for social change.

(b) Factors Limiting the Capacity of Education to Achieve Change:

(i) The inadequacy of resources given to education.

(ii) Educational facilities are ineffective because pupils enter too late and leave too early.

(iii) The nature of the educational programme.

65. These arguments can be summed up as too little, too late and irrelevant. "Too little"in the sense that the amount of money devoted to education, and the human resources involved in it, are too little to achieve any major inroads into the inequalities that exist in society, or to generate in society pressures for change. In essence, this is the argument for more resources - and an example of the policy implications are the "more effective schools" in New York. A programme designed initially by New York teachers, its main objective was to achieve a more effective education for under-privileged youngsters by devoting considerably more resources to the school system. In particular the adult-child ratio was drastically reduced, both by the addition of more teachers and various types of para-professionals and aids; and new skills and professions were introduced to primary schools, for example, guidance workers, educational psychologists, social workers, etc. The implementation of this policy in certain New York schools increased the unit cost of education by nearly 100%, and meant profound improvement in pupil-teacher ratios. This is an illustration of a position which accepts existing limitations on education effectiveness, but sees the nature of these limitations to be essentially limitations of resources. However, the first results of this programme were disappointing;

little immediate change seems to take place in pupil performance following the additional resources.

66. The "too late" argument is different, it suggests that many of the cognitive and affective skills necessary for effective school performance are not only learnt (or in the case of under-privileged children not learnt) outside school, but are in reality learnt before the age of school entry. People differ in the amount of development occurring before school entry, but many would contend that considerable amounts of cognitive learning (especially language style and certain types of conceptual thinking) take place before conventional school entry. This suggests that the inability of the educational system to narrow inequalities in scholastic performance is partly because of a "hidden curriculum" encouraging effective performances which is part of the middle and upper class child rearing patterns. Effective participation of the working class or other under-represented groups will only be achieved when this "hidden curriculum" is part of the experience of all children. The type of policy recommended by this argument is an emphasis on pre-school or early education. This can be in nursery school type facilities, play groups, or directly working with mothers in order to modify their child rearing patterns.

67. A third argument indicates that the impact of education is limited by the nature of educational programmes themselves. This is the special programme approach, which overlaps with the above but must be considered separately. In essence it is an insistence that what is required to involve under-represented groups in education is a special and different programme from existing educational programmes. The "head start" programme in the U.S. is one example aiming to compensate for disadvantaged backgrounds by early education; special curricula designed to meet the needs of disadvantaged is a second (for example "black studies", "wider horizons" and "college bound" programmes in the U.S.). A further example is the use of different teaching methods to get over either a traditional curriculum or one specifically designed to meet the needs of a specific target population. Perhaps the most striking illustration of such a programme is the use of educational technology in various high schools in the U.S. and the "resources for learning" project in the U.K.

68. What these three illustrations have in common is an optimistic view of the potential education has for social change. Their optimism lies in the assumption that the inability of the educational system directly to narrow inequalities in education or society is not because it must inevitably mirror social and economic differences in society but that until now too little has been given too late and (if the third position is accepted) much effort has been misdirected. It is important to note that the three educational strategies outlined above are not necessarily alternatives, many educationalists would argue that all three are necessary

if the creative potential of education is to be realised.

(c) Education for Production-Consumption

69. Earlier the conventional economic distinction between looking at education as a consumption and as an investment was mentioned. Then the context was the role of education in the social system. The same distinction can be made about education's role for the individual. It is trivial to say that education ought to prepare people for life, because it is too general a statement to be useful. Less general is the relative importance of education in preparing people for their productive roles (work) and consumption roles (within the family, leisure pursuits and community activity). The tactical problem is that everyone is both producer and consumer and therefore needs both types of preparation. But some productive roles are so skilled and technical that prolonged training is imperative (e.g. doctors and research scientists). Other roles are so critical to the development of the society (for example research and development workers in an industrial complex) that again prolonged specialist training is necessary. The former case represents the need for specialist technical skills, the latter the importance of the innovator and the innovation; but both stress the importance of work roles. By contrast, many peoples' work roles demand little training, although certain levels of educational skills may be necessary pre-requisites for job entry. Routine manual and non-manual jobs fit into this category. For such roles, preparation for consumption may be more significant than preparation for production. Between the two lies a variety of jobs (skilled manual, technicians, etc.) requiring some specialist training, not necessarily prolonged, but with the individual investing heavily for satisfaction in a domestic or consumption role.

70. In part this is a reiteration of the traditional educational question: at what stage and by what criteria does differentiation take place between pupils? The central problem indicated above is the distinction between a curriculum emphasising preparation for life, and those emphasising work preparation. Although increasing affluence has given the resource capacity, and increased enrolments the demand for the postponement of differentiation, it has not eliminated the need for it. Paradoxically, at the same time, the economy and society may be becoming more conscious of the need for a variety of skills which are educationally based. These are the skills of the fundamental researchers, the development worker translating basic knowledge into usable techniques, and application of such innovations in the production, distribution and administration process. For other groups the need is for education as a help in becoming good citizens, effective parents and critical consumers in the affluent society.

71. Earlier it was suggested that, for a mixture of arguments that emphasise social policies and economic efficiency, increasing emphasis has been placed upon the importance of schooling to ensure openness in selection for prestigeful and economically privileged positions. This merely postpones and makes more essential the differentiation-selection process. Prolonged educational enrolments into higher education have further complicated the central problem of which criteria are used to differentiate between students, and what are the consequences of this differentiation. One example is that the traditional irreversibility of secondary school selection is being postponed to higher education. This is a question of growing importance in systems that are looking forward to accepting as many pupils in higher education as they once did in selective secondary schools. But the main point is the differences in content (both course offered and teaching methods) in a system that is preparing pupils-students for effective performances of their work roles, and that is preparing them for their consumption roles. Prolonged educational enrolment may postpone the time when this takes place, but this very postponement may make more emphatic the need for the differentiation. Pupils-students can only be retained in an educational system into late adolescence if the experience has some meaning. For all students, part of the meaning may be the selective function of education. For a minority, what is being learnt is crucial both for the next stage of education and for occupational performance. However, for many, the final stage of education may be useful for job entry, but what is learnt may have little relevance to job performance. Where it has relevance is in the non-productive roles that everyone plays. Perhaps the greatest educational problem facing current educationalists is designing curricula and methods to prepare late adolescents and young adults for these roles.

72. Related to this point is perhaps the most fundamental question that can be raised about the future of education: whether it will continue to be a phase of life (i.e. up to age 16, 18 or 21) or an experience that recurs throughout life. For a variety of reasons the idea of "permanent" education is gaining ground amongst many educationalists. In part this is because the expansion of educational opportunity is a recent phenomenon, the educational chances of the bulk of the adult population having been limited. In part it is a result of economic change and the need for a variety of updating and conversion courses to prevent workers becoming economically obsolete. Equally important is the realisation of the potential role of continued education to enable people to enjoy the benefits of shorter working weeks, full employment and economic affluence. The concept of "permanent" education recognises the creative potential of a society that is beyond affluence, and the awareness that the existing population is ill-prepared to enjoy the fruits of an industrial society. To improve only the existing types of education would leave the adult population unaided, and, in addition, would ignore the need for continuous involvement of the population in education for work and for life.