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RESERVE

EDUCATIONAL PLANNING AND DEVELOPMENT IN KENYA:
THE 8-4-4 SCHOOL CURRICULUM AND ITS IMPLICATIONS FOR
SELF-EMPLOYMENT

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ABSTRACT

Since the late 1960s a major feature of the Kenya economy has been the rising unemployment of school leavers. This problem, which has reflected the inability of the modern economy to create employment positions as fast as the education system has been producing aspirants, has greatly influenced the search for approaches aimed at making formal education more relevant to national development. Government Commissions as well as donors who have advised on Kenya's education since 1972 have been emphatic that education should concern itself with preparing learners for self-employment. As a concerted effort to relate education more to development the 8-4-4 system of education, which has been government policy since early 1982, emphasizes among its goals the need for primary and secondary education to prepare learners for self-reliance. This emphasis is the theme of discussion in this paper.

The discussion is cast in the light of four theories which have been influential in the education for development debate in developing countries.

The paper centres on the 8-4-4 school curricula - its organisation, preparation for self-reliance and reform of the examination system. The objectives, content and examination procedures of the curricula are described in some detail. While it is accepted that in principle the 8-4-4 reforms are a step in the right direction, it is argued that implementation should be accompanied by continuous evaluation and experimentation so that shortcomings highlighted in the discussion are improved upon. In particular basic and action research should be employed in search of ways of relating education to life after school through a broad-based conceptualisation, development and implementation of curricula and examinations.

EDUCATIONAL PLANNING AND DEVELOPMENT IN KENYA: THE 8-4-4 SCHOOL CURRICULUM AND ITS IMPLICATIONS FOR SELF - EMPLOYMENT*

INTRODUCTION

While in the literature on education⁽¹⁾ and training in developing countries there is ample evidence of mis-match between what is learned in educational institutions and the skills which employers expect,⁽²⁾ it is the rising scarcity of wage employment for school leavers which has dominated the education - economy debate in Kenya since the late 1960s (L.L.O. 1972, N.C.E.O.P. 1976, 1984 - 88 Development Plan).⁽³⁾ Table 1 shows that between 1974 and 1983 the number of educated aspirants for employment in the modern sector consistently far outstripped the creation of new employment positions. It is in light of this trend that the 8-4-4 system, whose main thrust is to relate education more to national development, has been planned to include preparation of learners for self-employment as a major objective.

The attempt to relate education more to development is praise - worthy in view of the large proportion of the country's resources devoted to education, the need to stimulate production and meet the basic needs (including economic opportunity) of the population. However, the new system of education which is a far reaching departure from practice hitherto, raises both theoretical and practical issues with regard to the planning and implementation of educational policy as a tool in national development. Suggestions aimed at the improvement of the conceptualisation, development and implementation of the 8-4-4 primary and secondary school curricula so that they meet the country's goals of education, in particular the preparation of youth for self-employment, constitute the central theme of this paper.

* A draft of this paper was presented at the Second National Seminar on Population, Human Resources, Planning and Development Nyeri, Kenya 30th September 1985.

Table: I
GRADUATES OF THE EDUCATION SYSTEM ENTERING THE LABOUR MARKET AND NEW
POSITIONS IN WAGE EMPLOYMENT IN KENYA, 1974 - 1983 (in 000s)

PERIOD	1974/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83
C.P.E. Holders**	130	136	138	134	152	160	197	209	210
O and A level leavers***	29	40	48	55	60	70	84	84	91
Graduates of post-school education and training***	10	13	13	13	13	14	15	15	15
TOTAL	169	189	199	202	225	244	296	308	316
New Jobs (all sectors in the modern economy)	(-7)	38	45	9	61	34	19	22	47

Sources: Annual Reports of the Ministry of Education, Archives of the Kenya National Examinations Council, First Report of the 1980-1983 University Grants Committee, Report of the Working Party on the Financing of Higher Education (October 1982) and The 1984 Statistical Abstract.

NOTES * Numbers of graduates of the education system are approximations as figures from various sources do not tally. For ease of presentation all figures have been rounded to the nearest thousand.

** No account has been taken of those who drop out of the education system before completing a particular course. Drop-outs who enter the labour market constitute a significant figure, e.g. only 37% of children entering standard 1 in 1974 were in standard 7 in 1980.

*** Graduates from foreign institutions have not been included here. The Presidential Working Party on the Second University in Kenya (Sept. 1981) estimated that there were at least 7000 Kenyans studying in foreign institutions.

It is widely accepted that education plays an important role in development. Colclough (1980) in a survey of research on the relationship between education and development concludes that, education 'increases productivity in all sectors of the economy, reduces fertility, improves health and nutrition status and promotes significant attitude and behaviour changes'.⁽⁴⁾ Faith in the central role of education in development is deeply held in developing countries. The World Bank observes that 'when the developing countries began their drive for social and economic development nearly three decades ago, education was perceived as a means not only of raising political and social consciousness, but also of increasing the number of skilled workers and raising the level of trained manpower'.⁽⁵⁾ Since the attainment of political independence in 1963, education for development has been a central tenet of Kenya's public policy: political rhetoric, written policy statements and reports of government commissions have been unanimous that education must be tailored to promote development. As exemplified by tremendous sacrifices to finance the education of their children, individuals and communities see education as the gateway to a better paid job and a bright economic future.

In spite of the widespread belief that education is important to development, the exact nature of this relationship is far from clear and partly as a consequence it is the subject of controversy between several theoretical frameworks which try to explain it. It would appear that there is no linear relationship between the processes of formal education on the one hand and on the other, the processes of economic production. For example, it is often claimed that the teaching of science is a sound base for technological advance.⁽⁶⁾ Research in current approaches in the teaching of science has cast doubt on this assumption. In a recent paper Medvitz (1985) points out that the teaching of science in institutions tends to be formalistic and not directly related to the technological context of society:

'Science learned in school is learned as science in school,
not as science on the farm or in the health clinic or the garage'
He continues

'As yet we still do not have sufficient information about knowledge use in everyday productive settings to design materials and teach curricula explicitly relating science to technology'.⁽⁷⁾

A further illustration of the lack of direct causality between education and economic production concerns the teaching of agriculture. It is all too commonly argued that the teaching of agriculture in all primary and secondary schools should be made compulsory so that learners are equipped with the skills and attitudes which will enable them to enter and improve the economic sector in which the majority of the population in most developing countries are engaged. Such emphases often ignore the fact that the teaching of agriculture will only lead to the desired outcomes if it is complemented by reforms and changes within the industry. In the words of the 1963 Uganda Education Commission, 'until there has been a substantial break-through from relatively unproductive subsistence land use to much more intensive and profitable forms of farming in which young people can see a regard for their efforts, school leavers will continue to seek other means of employment. Hence, paradoxically, the problems of agricultural education are not primarily educational: they are intimately bound up with the solution of economic, technical, and social problems over which the Ministry of Education has no control-systems of land tenure, improved land use, finance and marketing, research and development, traditions and tribal customs, being among them'.⁽⁸⁾

One of the most significant features of the modern state, particularly in the developing world, is the practice of development planning. The ideal in this practice is that certain theoretical precepts are translated into development goals and means to achieve such goals are worked out and activated. Planning education along these lines is common, but the achievement of desired goals is often elusive. A major cause of failure to achieve planned goals in education is the planners' ignorance of or the reluctance to take into account the fact that there are 'divergent and conflicting views, theories and ideologies' which try to explain how education relates to development (Kinyanjui 1980).⁽⁹⁾ These theoretical underpinnings of education and development are not only transmitted by scholars across national boundaries and continents, but also they are modified or even abandoned in light of new evidence. In planning education, further complications arise because the several goals aimed for may call for different and conflicting means for achieving them. Henchey (1981) points out this aspect as follows:

'There are numerous controversies surrounding the form and content of general education - the basics of learning -'

and this controversy is likely to increase as the expectations of general education are enlarged to include preservation of local culture and language, preparation for rapidly changing and unpredictable employment patterns, and a sensitization to global problems and the interdependence of peoples'.⁽¹⁰⁾

This paper briefly discusses four theories which, in the last two decades, have influenced educational thinking and development in Kenya. These theories are regarded as a prism through which the on-going educational reforms can be refracted. The paper examines the relationship between stated goals of education and the organisation of content, methodology and evaluation of learning in the 8-4-4 system. It is suggested that the reforms would lead to the desired goals more successfully if they are continuously moulded such that they take into account pertinent points in the theories of education and development. It is argued that, in order for education to be planned and developed such that it is of benefit to the majority of the population - The primary and secondary curricula should be streamlined so that a few new subjects which integrate the essential content from the inherited plethora of specialist disciplines are developed. Such streamlining should ease the constraints in teaching/learning time which are observable in the 8-4-4 curricula. In this respect a sound grounding in literacy, numeracy, the natural sciences and the humanities, and a proper balance between formal teaching on the one hand and on the other, private study and out-of-class learning, should be maintained. It is argued that a good relevant academic grounding and learning in which the student takes the initiative, rather than following the teacher, are the essentials of preparation for self - reliance.

-The curriculum development process should be widened to include data and expertise from non-educational walks of life. This should be particularly so if the planning and development of education for self-employment is to take into account the economic opportunity structure in society.

- The great influence of examinations on the education system should be seen in the context of opportunities in society. Reform of the examinations system should be conceptualised as a matter which goes beyond the internal efficiency of education. It is argued that an

approach to reform which emphasizes continuous assessment as the ideal mode rather than the use to which examination results are put is likely to undermine the teacher-pupil relationship, aggravate current problems in the conduct of examinations and in the final analysis fail to relate education to life after school.

THEORIES OF EDUCATION AND DEVELOPMENT

The Human Capital Theory

The human capital theory, which was popularised in the U.S.A. by among others Shultz (1961)⁽¹¹⁾ and Becker (1962)⁽¹²⁾ and adapted for the developing countries by Harbison & Myers (1964),⁽¹³⁾ Blaug (1968)⁽¹⁴⁾ and Bowman (1968),⁽¹⁵⁾ has played a significant role in the development of education in Kenya. According to this theory, the development of the human resource through education is the most important variable in effecting development. Harbison and Myers argue that human resource development (education) is a 'more realistic and reliable indicator of modernisation or development than any other single measure' and 'one of the necessary conditions for all kinds of growth - social, political, cultural, or economic'.⁽¹⁶⁾ In the sphere of economic development the theory maintains that, investing in education assists industrial and technological advance because 'education increases labour's productivity by embodying in that labour increased skills and knowledge'.⁽¹⁷⁾

The human capital theory was widely accepted in the newly independent countries of Africa. In Kenya, its popularisation coincided with the cry for more education associated with the nationalist movement and fueled by the need for the country to replace departing expatriate staff after 1963. The need for middle and high-level manpower was seen as a crucial part in the planning of both education and general development.⁽¹⁸⁾ Thus in the early years of independence the post-primary sectors were thought to be the most important in the development of education. The Kenya Education Commission clearly indicated this -

'Although primary education has economic importance, it is not so important in this respect as secondary, commercial, technical and higher education. Consequently, too great an emphasis on primary education must not be allowed to hinder adequate growth in these other sectors'.⁽¹⁹⁾

Belief that education was the key to the future prosperity of individuals and the society greatly contributed to monumental growth in educational enrolments (Table 2)

Table 2: PRIMARY AND SECONDARY ENROLMENTS IN KENYA, 1963 - 1983 (in 000s)

<u>Year</u>	<u>Primary</u>	<u>Secondary</u>
1963	892	31
1968	1210	101
1973	1816	175
1978	2995	362
1983	4324	494

Source: Republic of Kenya : Annual Reports of the Ministry of Education and the 1983 and 1984 Economic Surveys

As can be deduced from Table 2, between 1963 and 1983 primary school enrolments rose by 485% as compared to a monumental 1594% in secondary education. At the post-secondary level much higher growth rates were recorded. For example, in 1963/64 there were 370 Kenyans studying in the University of East Africa,⁽²⁰⁾ whereas in 1980/81 the enrolment at the University of Nairobi (main Campus and Kenyatta University College) was 9140,⁽²¹⁾ representing a percentage increase of 2470. What is observable about this growth of education in relation to economic development?

The expansion of education has not been matched by a corresponding economic growth rate. Since the early 1970s the country's rate of economic growth has slowed down.⁽²²⁾ It has already been pointed out that the majority of graduands of the educational system are unable to obtain employment in the modern sector. It is often argued that the rapid quantitative growth of education has exacerbated the unemployment problem by deflecting public and private resources away from investments which could have generated new jobs.⁽²³⁾

The failure of the human capital theory to provide a satisfactory explanation of the relationship between education and development in all regions of the world has prompted a search for alternative premises. Other

theories which in one way or another, have influenced educational planning and development in Kenya have been developed.

Structural Theory

The structural theory⁽²⁴⁾ completely contradicts the development of the human resource premise. The structuralists argue that capital is the most important variable in economic development. In agreeing with the structuralists, Moncada (1981) states:

'Close examination of the variables of economic growth reveals that, as regards manpower, advanced skills and increasing specialization are much more a consequence than a cause of capital and technological investment'.⁽²⁵⁾

As far as education is concerned, the central tenet of structural theory is the belief that the economic function of the School is primarily to reproduce the social relations of production, as opposed to technical or productive skills. To the structuralist, the schooling of the future worker aims at producing a person who can do boring and repetitive work without complaint, can be punctual and obedient and knuckle down to the discipline of the work place. In other words, and in contrast to the human capital theory which sees the school as capable of developing cognitive technical or production skills, the structuralists see education as aiming at the inculcation of affective social skills: the School bridges the gap between home and work by teaching students to accept non-family authority, developing disciplined work habits, getting students to accept their position in hierarchy through failure or success in examinations and learning to seek for rewards by meeting school requirements.

Inherent in the structural theory is the notion that in capitalist societies there is an unwritten alliance between education, economic production and the political system: the role of the school is seen primarily as an instrument for the intergenerational reproduction of the existing class system, and as an obstacle to the process of social mobility according to academic merit. In summing up this view Weis (1979) states:

'Basic to this proposition is the idea that schools operate primarily to maintain the existing distribution of power and wealth in society and that social mobility (through) the educational system is incidental and, in any event minimal'.⁽²⁶⁾

Because the structural theory sees education as being intimately interwoven with the macro-organisation of society, its proponents do not see the need to substantially address themselves to reforms in education as such. They argue that reform in education must be preceded by fundamental changes in the political organisation and the economic production system. In developing countries, like Kenya, which were formerly colonised and whose social and economic systems are influenced and/or even dominated by those of the former imperial powers, many scholars see no hope for educational reform per se. So long as a developing country remains in a state of dependency in relation to the former imperial power, it is argued that education remains part of that system. In making this point Kinyanjui (1980) argues that because the 'cultural capital' and the mode of economic production of the imperial power was deeply imbedded in the developing country during the colonial period, the attainment of political independence could hardly be expected to change the role of education. He continues

'In this situation, metropolitan cultural capital is already established, and the primary task of education is to reproduce cultural capital, ideological outlook and skills among the social groups which have accepted the imported cultural capital and are politically and economically incorporated in the dominant mode of production'⁽²⁷⁾

One of the consequences of the structuralist approach to change in education from the broader need for socio-political reform has been to shift emphasis in academic circles away from research aimed at detailed educational planning, particularly in the crucial area of curriculum development. In Kenya, where the educational research community has remained small (relative to developed countries) and to a considerable extent influenced by foreigners, some of the best scholars have shown structuralist learnings.⁽²⁸⁾ Although research emphasis on the relationship between education and the economy and society has shed light on matters which the educational planner should take account of, scholarly concentration on issues such as 'equity, cultural imperialism, social control and theories of the state as applied to education',⁽²⁹⁾ has meant that issues of the internal efficiency of education- curriculum development and implementation - have tended to be portrayed as relatively unimportant and research in them as tinkering with an unsatisfactory system.

Another outcome of the injection of structuralist thinking in educational research has been to create suspicion between policy makers and scholars. Because studies which approach educational change from the point of view of need for overall reform of society resemble Marxist thinking, policy makers tend to dismiss them as revolutionary. Commenting on historical studies of the 1970s which, in line with related social science approaches, sought interpretations based on 'production relations in pre-colonial, colonial and post-colonial Africa', Ogot (1978) observes

'The thesis being advanced by these scholars is a valid one and would not have caused much confusion in East Africa if they were not ultimately derived from Marx. For there are people, including scholars, who still see red at the mere mention of the name 'Karl Marx'.⁽³⁰⁾

The trouble has been that both policy makers and scholars have allowed themselves to be caught up in the ~~misunderstanding~~ which, as Schmidt (1971)⁽³¹⁾ points out, arises when to either governments or intellectuals Marxism ceases to be a critical theory of society and instead becomes a science of legitimisation.

Screening Theory of Education

The screening theory has been developed in an attempt to give understanding of the selection function of education. In as far as education is related to the labour market, the screening theory may be defined as follows: because the supply of educated labour is always more than the demand, 'the education system gives the employer an opportunity of rejecting half the candidates who, though they could perfectly well perform the work, do not have their secondary school leaving certificates'.⁽³²⁾ In the words of Rado (1974) 'employers use educational attainment only as a rough-and-ready selection sieve. They may do this, not because they attribute economic value to what is taught, or even to the qualities of mind which examinations measure; but lacking cheap and reliable selection methods and aptitude tests of their own, they may assume that, in a buyers' market for most types of labour, raising the minimum educational qualifications for a job will reduce applications to a manageable number, at little cost to the employer'.⁽³³⁾

The proponents of the screening theory⁽³⁴⁾ argue that in developing countries the selection function has become the dominant goal of education. They maintain that the predominant use of education in this way makes it impossible for both its development to be orderly, and for institutions to pass on to students skills and attitudes necessary for meaningful participation in the development of society:

(1) Because employment is tied to academic qualifications, there is a strong drive for rapid quantitative growth of educational opportunities at the next level: as soon as the number of people qualified to undertake work at a given level of education outstrips the number of jobs available, employers raise the academic qualifications required. As a result, society is forced to increase educational opportunities at the new higher level and so on. This makes it impossible for a country, particularly a poor developing one, to rationally plan its education and to ensure that it remains within available means.

(2) Because employers value the mere possession of an academic certificate and not so much the mental and attitudinal development which that certificate signifies, institutions and learners concentrate on what they think will be in the examination. This undermines broad approaches to curricula. Disciplines which have no direct bearing on the examination are ignored even though the ministry of education may have issued orders that such disciplines be taught. Moreover, the methodology of teaching/learning comes to be dominated by memorisation of facts to be regurgitated in the examination and then forgotten, rather than by the development of reasoning abilities which live beyond school. Most institutions see little point in organising the concerted development of appropriate attitudes (which are not examinable in the conventional way), even though these are extremely important in life after school.

Progressive Theory

The progressive theory has been very influential in shaping educational thinking in Kenya. While this theory accepts that schools could be positive institutions in society, it does not acknowledge a direct relationship between the functions of the schools and the structure of the economy. In expressing this view Court and Ghai (1974) maintain that, 'we are far from a causal theory of education and development in which specific kinds of developmental attainment, or retardation, can

be attributed to particular types of educational change. The coincidence of economic growth and educational expansion, such as has occurred in Kenya, begs the question of causal precedence'.⁽³⁵⁾ One of the strong points made by the progressives is the argument that while schooling could perform a productive function by providing skills that are valuable at work, both cognitive and non-cognitive outcomes of schooling are not always beneficial to development. In discussing the problems which afflict Kenya's education, Ghai (1974) makes this point as follows:

'...the education system is largely irrelevant to the great majority of the school going population who do not reach the higher range of the educational ladder and cannot be absorbed in productive employment in the modern sector of the economy. Not only does the education they receive not equip them in any way for the kind of life they will inevitably have to lead, but it is alleged to add to social and economic problems by the inculcation of inappropriate attitudes and values and by raising false expectations'.

Ghai holds both the content and methods of education responsible for this state of affairs. He continues:

'The curriculum does not put emphasis on the skills and aptitudes required by the economy. The teaching places heavy reliance on learning by rote and the accumulation of a mass of facts and figures. The examinations are more a test of memory and the ability to regurgitate facts than of general intellectual competence'.⁽³⁶⁾

For those involved in the planning and development of education, an attractive and significant aspect of the progressive theory (as contrasted with the structural theory) is the progressive's view that education can be made to contribute more to development through reforms in curricula and teaching methods: in other words, reform in education is possible without a complete overhaul of the organisation of society.

EDUCATIONAL GOALS AND APPROACHES IN KENYA

Education for Social and Individual Development

The 1964 Kenya Education Commission recommended that the goals of education should be to foster nationhood and promote national unity by creating respect for Kenyan cultural traditions, cultivating healthy

attitudes and relationships, promoting social equality, and passing on skills necessary for national development.⁽³⁷⁾ Although in some respects the circumstances have changed since 1964, these remain the key goals of education in the mid-1980s. In the foreword to the secondary school syllabuses to be introduced in schools in 1986 the Director of Education (Secondary) states that the main objective of the new curriculum 'is to prepare the learner for self-reliance, training and further education' and 'also help to lay a firm foundation for the development of self-discipline, integrity, adaptability, co-operation and patriotism'.⁽³⁸⁾ If these goals are considered from the point of view of the relationship between primary and secondary education and future life, it can be seen that schools are expected to develop in learners skills, abilities and attitudes required by:-

- ALL for (a) the development of good citizenship
- (b) individual growth which leads to a philosophy of life, enabling each person to fit into family and social life;
- the MAJORITY who will have to generate economic opportunity on the basis of self-employment (Table 1);
- those, albeit FEWER than those going into self-employment, who will enter wage employment after school;
- the FEW who will proceed with further education and training and who will constitute the high level manpower of the future.

When the objectives of school education are stated in terms of comprehensive external outcomes of learning, as has been done here, two implications for curriculum development and implementation emerge. First, the learning content should be comprehensively developed so that it caters for all expected external outcomes. Secondly, the teaching/learning process should aim at the simultaneous development of cognitive (mental) and non-cognitive (affective and psychomotor) skills, abilities and attitudes. Current reforms are reviewed with this framework in mind.

The 8-4-4 System of Education and Reform of School Curricula.

With effect from January 1985 the former narrowly based primary school curriculum consisting of English, Mathematics, History and Civics, Geography and Science has been expanded to include Art and Craft, Home Science, Kiswahili, Music and Religious Education.⁽³⁹⁾

The new curriculum, which is to be buttressed by an expanded examination at the end of the course, is expected to expose learners to practical activities (preparation for self-employment?), enhance cultural and attitudinal development, as well as lay a foundation in literacy, numeracy, and the social and natural sciences.

In the secondary sector the curriculum is being consolidated and, for each individual expanded, so that the learner is exposed to a broad based education. The current examinations curricula at form 4 (to be phased out in 1987) require that a candidate be examined in between 6 and 9 subjects (out of a total of 60), with the only compulsory ones being English Language and Mathematics.⁽⁴⁰⁾ Under the 8-4-4 system of education⁽⁴¹⁾ which will be introduced in Form 1 in 1986 a candidate is to be examined in eleven subjects (out of 29), with nine of them being compulsory (Table 3). As part of the effort to inculcate appropriate social attitudes, a new though non-examination subject - Social Education and Ethics - has been introduced.

Table 3: EXAMINATION SUBJECTS IN SECONDARY SCHOOLS UNDER THE 8-4-4

<u>SYSTEM</u>	
<u>Compulsory Subjects</u>	
1.	English
2.	Mathematics
3.	Kiswahili
4.	Physical Sciences
5.	Biological Sciences
6.	Geography
7.	History and Government
8.	Religious Education*
9.	Agriculture
<u>Optional Subjects</u> (one from each of the following electives)	
10.	<u>Elective ONE</u> . <u>Either</u> Industrial Education, <u>or</u> Home Science.**
11.	<u>Elective TWO</u> . <u>Either</u> Business Education, <u>or</u> Art and Design, <u>or</u> Music, <u>or</u> a Foreign Language.***

Non-Examination but compulsory Subjects: Social Education and Ethics, and Physical Education.

Source: Republic of Kenya: 8-4-4 System of Education, Ministry of Education, Science and Technology, December 1984 & Personal interviews with Officers of the Ministry.

Notes:

- * Syllabuses for Christian and Islamic Religious Education are already developed. Syllabuses in other religions will follow.
- ** Several subjects come under this general heading, e.g. Wood, metal, electric technology and power mechanics.
- *** Foreign languages in the current system include French, German, Italian, Spanish, Gujarati, Punjabi, Hindi and Urdu.

As can be seen through the careful scrutiny of the new school curricula, an attempt has been made to broaden the scope so that every student is exposed to all aspects of education which are required by stated goals. For example, at the secondary level every student must offer a subject with a practical orientation and a culturally based one,⁽⁴²⁾ as well as the compulsory academic subjects. Scrutiny of the individual syllabuses shows that a great deal of work has been done to define the objectives of teaching each discipline and its various parts. Of great significance in all the new syllabuses is the conscious effort to state teaching/learning objectives in terms which reflect the expected external outcomes of education (e.g. Table 4). Moreover, there has been an effort to make Kenya the centre of the content of various syllabi; this is particularly obvious in the secondary syllabuses for Geography, History and Government, Religious Education, and Agriculture. These reforms are in the right direction and are fulfilments of the ideas of progressive thinkers who for a long time have been advocating for curriculum reform along these lines.

An important innovation in the 8-4-4 system is the intended introduction of continuous assessment to supplement the terminal examinations at end of the primary and secondary courses.⁽⁴³⁾ The use of continuous assessments is intended to lessen some of the distortions of the learning process which the proponents of the screening theory of education see in the sole use of examinations at the end of courses. In addition to contributing to the eventual grade awarded in the certificate, continuous assessments should also play a formative role in the teaching/learning process: they should enable both the teacher and the student to diagnose areas which need further attention while there is still time to do something about it. Continuous assessments also lend themselves as a much more applicable and meaningful measure of practical skills (and to some extent attitudes) than conventional paper and pencil tests.

Table 4: SOME SOCIAL OBJECTIVES IN ELEVEN SECONDARY SCHOOL SYLLABUSES
IN THE 8-4-4 SYSTEM OF EDUCATION

<u>Subject</u>	<u>Behaviour Expected of the Learner at the end of the Course</u>
1. English	<ul style="list-style-type: none">- identify and appreciate his cultural foundations as expressed in both oral and written literature- appreciate the importance of English as a tool of fostering understanding among peoples
2. Geography	<ul style="list-style-type: none">- identify, understand and have respect for the different ways of life influencing development at local, national and international level- demonstrate the acquisition of appropriate attitudes and values which will make him a useful member of society
3. History & Government	<ul style="list-style-type: none">- develop a sense of patriotism and national pride- appreciate the need for and importance of mutual social responsibility
4. Christian Religious Education	<ul style="list-style-type: none">- develop a sense of self-respect and respect for others- contribute towards the development of the quality of life
5. Art and Design	<ul style="list-style-type: none">- identify, describe and appreciate his and other people's artistic and cultural heritage- actively participate in group work in order to cultivate harmony at national and international levels

6. Music - acquire a sense of co-operation by participating in musical activities
7. Physical Education - develop positive group participation and sportsmanship
8. Social Education and Ethics - develop a harmonious ethical/moral relationship between himself and the home, the school, the neighbourhood, Kenya and other nations
9. Business Education - develop skills and attitudes which will encourage him to share his business knowledge with others and discuss current issues
10. Biological Sciences - create an awareness of the value of co-operation in solving problems
11. Physical Sciences - appreciate the responsibility of the scientist to the society.

Source: Republic of Kenya - Secondary Education Syllabuses for English, Geography, History & Government, Christian Religious Education, Art and Design, Music, Physical Education, Social Education and Ethics, Business Education, Biological Sciences and Physical Sciences, Ministry of Education, Science and Technology, July, 1985.

NEED FOR CONTINUED IMPROVEMENT AS REFORM IS IMPLEMENTED

The Role of Research

As already observed, the 8-4-4 system is in principle a step in the right direction. The development of the curricula has consciously taken account of the comprehensive needs of the external efficiency of education. With the publicity which has accompanied the adoption of the idea as public policy, the country has grown to expect that the new system of education will result in far reaching tangible outcomes, particularly with regard to the development of appropriate social skills in youth and the generation of economic opportunities in the face of unemployment. Communities continue to make tremendous efforts, particularly in the provision of physical facilities, to assist in the implementation of the new system. Kenya - the government and the people - is committed to the new system, consequently everything should be done to ensure its success. But how is success to be ensured? A key step should be the acceptance of the frequent observation that, in reality it may be impossible to draw a sharp distinction between policy and its implementation. Thus policy should be conceptualised and stated such that it is flexible and allows for changes at the implementation stage. A second step should be to have inbuilt, evaluation and research as processes which are essential to the modification of policy during implementation.

In implementing fundamental changes in a sphere as complex as education for development, there is great need for simultaneous experimentation and evaluation at all stages of the exercise. Experimentation and evaluation in such an exercise are formative: they enable improvements aimed at ensuring that intended goals are achieved. Yet in spite of this obvious fact, in many developing countries policy is often implemented without this formative component. Commenting on this tendency the World Bank observes:

'Research and experimentation in educational growth and reform have been scanty because the extent and complexity of the knowledge base required for the development of sound educational policies have been underestimated... research is hampered by, (inter alia) the failure to accept it as an integral part of the policy making process'.⁽⁴⁴⁾

Among others, three areas of the new system of education need to be subjected to research and development. These three areas are the size and coherence of the curriculum, the concept of education for self-employment and reform of the examinations system.

The Size and Coherence of the Curriculum

In order to cover all areas considered necessary for broad education, at both the primary and secondary level, the number of subjects to be studied has been increased. It could be argued with some justification that the extra year in primary school compensates for the enlarged curriculum at that level.⁽⁴⁵⁾ At the secondary level the new course has been reduced to four years and the number of subjects increased, with the result that the time available for teaching has had to be adjusted. Table 5 compares the teaching period allocations for the pre-reform and the 8-4-4 curricula.

Table 5: TEACHING PERIOD ALLOCATION UNDER THE CURRENT EXAMINATION CURRICULUM* AND THAT FOR THE 8-4-4 SYSTEM** (For a Form 3 or 4 Class).

Subject	Periods Per Week	
	Current	Proposed for 8-4-4
1. English	8	6
2. Mathematics	7	6
3. Kiswahili	5	5
4. Physical Science/ Physical Sciences	6	3
5. Biology/Biological Sciences	4	3
6. Geography	3	3
7. History (and Government)	3	3
8. Religious Education	3	3
9. Agriculture		3
10. Practical Subject (<u>either</u> Industrial Ed. <u>or</u> Home Science)		3
11. Cultural subject (<u>either</u> Business Ed., <u>or</u> Art and Design, <u>or</u> Music, <u>or</u> a Foreign Language)		3
<u>Non-Examination Subjects</u>		
12. Social Education and Ethics		2
13. Physical Education	1	2
TOTAL ***	37	45

Source: Republic of Kenya: The Organisation of School Curricula in Non-technical Schools, Ministry of Higher Education, Inspectorate October 1980; 8-4-4 System of Education, op. cit. & personal interviews.

Notes

- * Under the current examination curriculum, the great majority of students opt for 8 subjects or less. Some schools have the option to offer Agriculture, or a practical or cultural subject as an alternative to for example, History and Religious Education.
- ** Under the 8-4-4 system choice of subjects is guided and restricted.
- *** The current teaching week consists of 40 teaching periods i.e. 5 teaching days each with 8 periods. The Inspectorate has been discouraging a longer teaching week, although some schools are reluctantly allowed to operate a 42 period week. Under the 8-4-4 system, the teaching week will be 45 periods i.e. 5 teaching days each with 9 periods.

Table 5 raises a number of issues for which research needs to be mounted and modifications made, for example:

(1) Is there conflict between broad based terminal education and the requirements of further education? How will the reduction of teaching time in English, Mathematics and the Sciences affect student achievement under the new system? How does the syllabus content in English Mathematics and the Sciences of the 8-4-4 system compare with that in the pre-reform syllabuses? It should be borne in mind that these three areas are basic to modern education and that achievement in them has up to now been below expectations (Table 5). Research in these issues could be guided by hypotheses such as -

- The teaching time allocated to English, Mathematics and the Sciences under the Secondary component of the 8-4-4 system is insufficient for the preparation of students who will proceed to higher education.
- The teaching time available under the Secondary component of the 8-4-4 system is inadequate for the coverage of the increased syllabus content and this is likely to result in lower student achievement.
- A good academic grounding in literacy, numeracy and the natural sciences as well as in the social sciences is essential preparation for self-employment.

Table 6: PERFORMANCE IN THE EXAMINATION FOR THE KENYA CERTIFICATE OF EDUCATION (O LEVEL), 1980 & 1981
(Selected Subjects)

LEVEL OF PERFORMANCE	NUMBER OF CANDIDATES AND PERCENTAGES (in brackets)											
	English Language		Mathematics		Physical Science		General Science		Biology		Christian Religious Ed.	
	1980	1981	1980	1981	1980	1981	1980	1981	1980	1981	1980	1981
Distinctions (Grades 1 & 2)	437 (0.5)	595 (0.6)	1021 (1.2)	851 (0.9)	231 (1.1)	183 (0.9)	87 (0.2)	15 (0.04)	509 (1.2)	258 (0.6)	663 (0.9)	726 (1.0)
Credits (Grades 3 - 6)	12249 (13.4)	12358 (13.3)	10071 (11.4)	9284 (10.2)	5601 (27.5)	5506 (26.9)	6722 (17.4)	4411 (11.9)	8999 (21.8)	9233 (21.4)	21193 (29.8)	21143 (29.2)
Bare Passes (Grades 7&8)	24568 (26.9)	25491 (27.4)	12885 (14.7)	12629 (13.9)	7475 (36.7)	7418 (36.3)	9860 (25.5)	3525 (25.7)	14149 (34.6)	14299 (33.1)	20634 (29.0)	21299 (29.4)
Failures (Grade 9)	53968 (59.2)	54494 (58.6)	63766 (72.7)	68675 (75.1)	7068 (34.7)	7337 (35.9)	22053 (56.9)	23083 (62.4)	17355 (42.4)	19451 (44.9)	23666 (40.3)	29243 (40.4)
TOTAL	91222 (100)	92938 (100)	87743 (100)	91439 (100)	20375 (100)	20444 (100)	38722 (100)	37034 (100)	40912 (100)	43241 (100)	71156 (100)	72411 (100)

Source: Archives of the Kenya National Examinations Council (K.N.E.C.)

Notes

- (1) In Grading 1980 and 1981 O level exam., K.N.E.C. (created in 1980) made efforts to establish standards closely related to those obtaining under the University of Cambridge Local Examinations syndicate (up to 1973) and the East African Examinations Council (1974-1979).
- (2) A number of non-school candidates did not enter for Mathematics. This is allowed by the exam regulations.
- (3) Entries for Physical science were restricted to the better equipped schools. The other schools offered General Science (no practical paper in the exam) as an alternative.
- (4) Failure rates of well over 50% in English Language, Mathematics and General Science, as opposed to about 40% in Christian Religious Education, reveal a low level of achievement. In the better equipped schools with a highly select group of students, failure rates in Physical Science (c. 35%) and Biology (c. 43%) are unacceptably high.

(2) How do time constraints arising from the expanded teaching time affect school organisation and the need for regular home-work/private study and out-of-class learning?

Research has shown that the amount of home work and private study by students is an important variable in improving achievement.⁽⁴⁶⁾ Out-of-class activities, such as games, clubs and societies, are an important part of education. These activities should be organised such that they 'promote self-reliance and initiative on the part of the children'.⁽⁴⁷⁾

To a large extent a well organised out-of-class activities programme can ensure that the ill-effects of the 'hidden curriculum', which proponents of the progressive theory of education associate with schooling, are reduced. How will the 8-4-4 teaching curriculum affect the current daily routine in schools? (Table 7). Considering that day students need time to travel to and from school, can day schools devote more time to teaching and retain the current balance between in-class activity, home-work/private study and out-of-class activities? Even if a 45 period week can in fact be organised, is it desirable in terms of what students can effectively take? Are there any signs of lowered learning motivation arising from mental fatigue? Hypotheses which could guide evaluative research in order to answer these questions could include -

- By reducing the time available for home-work/private study and out-of-class learning, the 8-4-4 system in secondary schools will make learning more bookish, didactic and teacher-centred, and will exacerbate the ill-effects of the 'hidden curriculum'.
- The quality of education in day secondary schools will deteriorate because they will have to reduce the time for private study/home-work at school and out-of-class activities.
- The increased teaching time will result in mental fatigue and lead to lowered learning motivation in students.

(3) Is increasing the number of subjects to be studied the best way of organising a broad based curriculum or should consideration be given to restructuring the relevant content into fewer subjects?

One of the revelations in Table 5 is that curriculum development has yet to break loose from the inherited tradition of specialization. The content remains organised in compartments with familiar names, except in the case of Social Education and Ethics. It should be recalled that one of the objections of structuralist thinking with regard to education and develop-

Table 7: THE PRE-REFORM DAILY ROUTINE IN DAY* SECONDARY SCHOOLS

8.00 a.m.	Registration
8.05 - 8.15	Pupils with Class Teacher or at Assembly
8.15 - 8.55	FIRST TEACHING PERIOD
8.55 - 9.35	SECOND PERIOD
9.35 - 9.40	Short Break
9.40 - 10.20	THIRD PERIOD
10.20 - 11.00	FOURTH PERIOD
11.00 - 11.15	Break
11.15 - 11.55	FIFTH PERIOD
11.55 - 12.35 p.m.	SIXTH PERIOD,
12.35 - 1.35	Lunch Break
1.35 - 2.05	HOMEWORK
2.10 - 2.50	SEVENTH PERIOD
2.50 - 3.30	EIGHTH PERIOD
3.30 - 4.30	HOMEWORK
4.30 - 5.30	OUT-OF-CLASS ACTIVITIES

Source: Republic of Kenya: A Manual for Heads of Secondary Schools in Kenya, Ministry of Education 1979 and Daily Routines obtained in 1985 from several Day Schools.

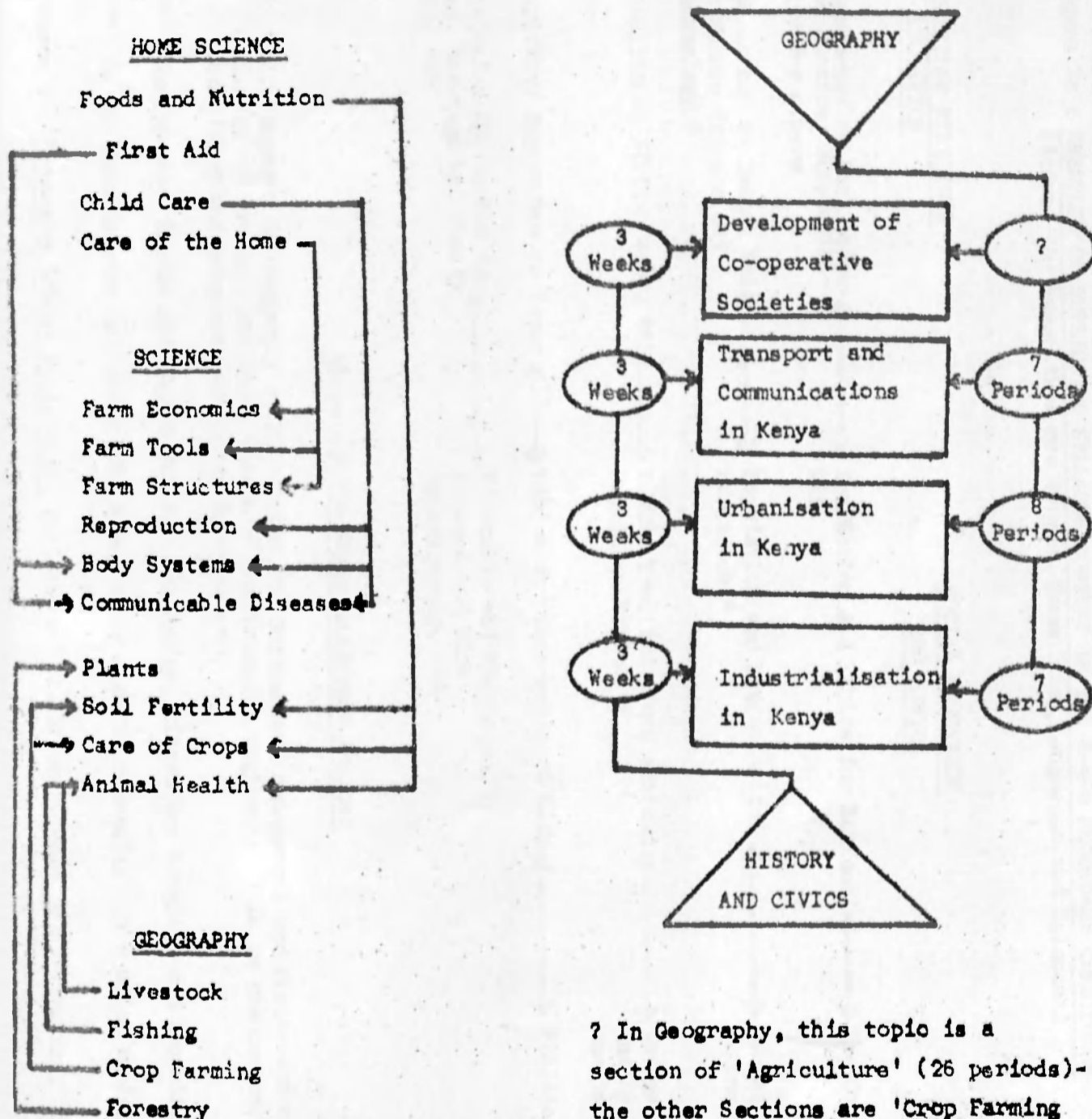
* Boarding schools have an advantage in that they could begin the days activities earlier and continue for much longer. With a short break after 3.30 p.m., boarding schools have a much longer period for out-of-class activities before supper. These activities could also be organised on Saturday and Sunday. It is normal for home-work/private study (preparation) to take place after supper in boarding schools. The recommended time for preparation is between 7.30 and 9.00 p.m., but some schools go on to 9.30.

ment in formerly colonised countries is that their systems of education remain too closely associated with the social and economic set up of the former imperial power, and that such education is of benefit only to the few who are able to enter the modern sector of the economy. A curriculum consisting of highly specialised subjects is not only an expression of the inherited, and by now archaic, legacy, but more importantly it fails to satisfy the comprehensive goals of education. In advocating for an education which avoids the learning of 'inert ideas' and, in relating the acquisitions of knowledge to its utilisation, prepares learners for life, Whitehead decries the specialist curriculum as follows:

'There is only one subject - matter for education, and that is Life in all its manifestations. Instead of this single unity, we offer children - Algebra, from which nothing follows; Geometry, from which nothing follows; Science, from which nothing follows; History, from which nothing follows; a Couple of Languages, never mastered; and lastly, most dreary of all, Literature represented by plays of Shakespeare, with philological notes and short analyses of plot and character to be in subsistence committed to memory. Can such a list be said to represent Life, as it is known in the midst of the living of it? The best that can be said of it is, that it is a rapid table of contents which a deity might run over in his mind while he was thinking of creating a world, and had not yet determined how to put it together'.⁽⁴⁸⁾

Further scrutiny of Table 4 should underscore the point Whitehead is making. The selected objectives for the eleven subjects point to the need for education to prepare the learner for living and working together with other people in the nation and the international community. The question arises, is it necessary to split the preparation for this goal into eleven subjects? There is plenty of evidence that, in addition to splintering knowledge into specialised compartments, content in the 8-4-4 curricula (as in the current ones) is often duplicated across subjects (Figures 1, 2a and 2b).

Figure 1: EXAMPLES OF DUPLICATED SYLLABUS CONTENT IN THE 8-4-4 PRIMARY CURRICULUM



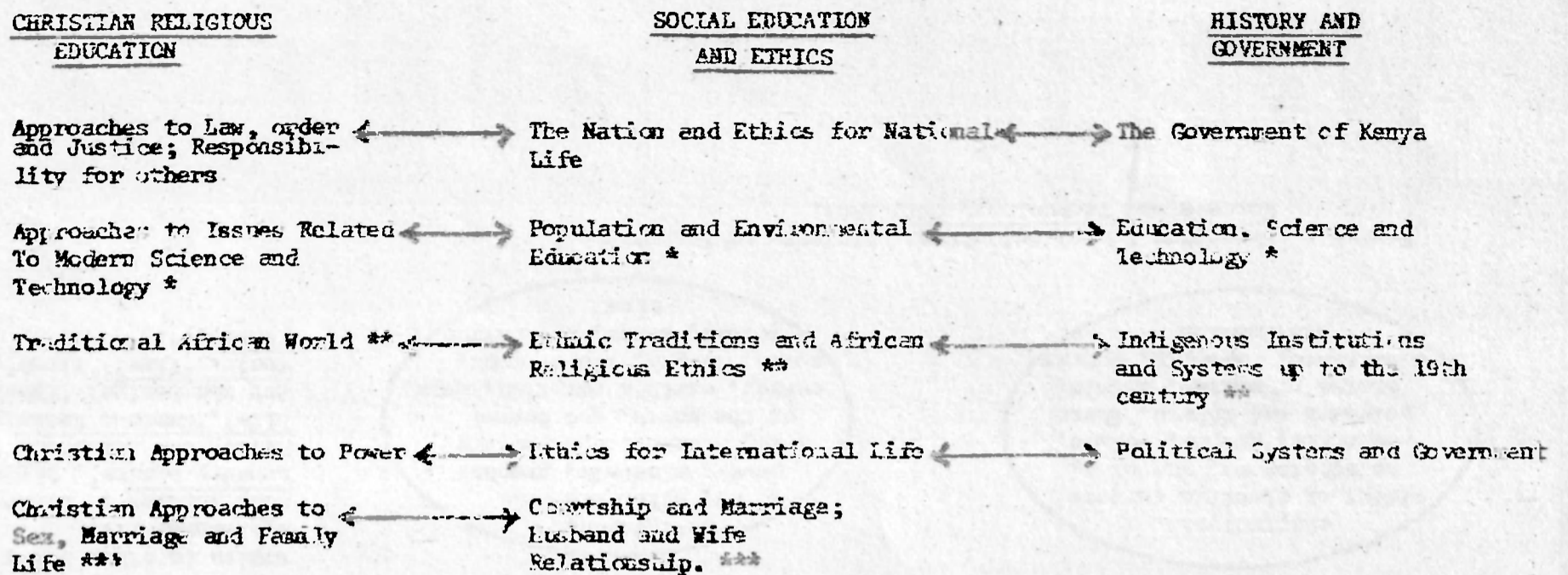
Why can't these topics be learned under one subject, 'Science and Life'?

? In Geography, this topic is a section of 'Agriculture' (26 periods)- the other Sections are 'Crop Farming and Livestock', 'Fish Farming' and 'Bee Keeping'.

Is it necessary to double the time to teach these topics? How do these topics relate to 'Water', 'Energy' and 'Pollution' in the Science Syllabus?

Source: Syllabuses for Kenya Primary Schools - Standards VII and VIII, Ministry of Education, Science and Technology 1984.

Figure 2a : EXAMPLES OF DUPLICATED SYLLABUS CONTENT IN THE 8-4-4 SECONDARY CURRICULUM
 (Across the Humanities and Between Humanities, Languages and Sciences)



←————→ Are These Different Topics?

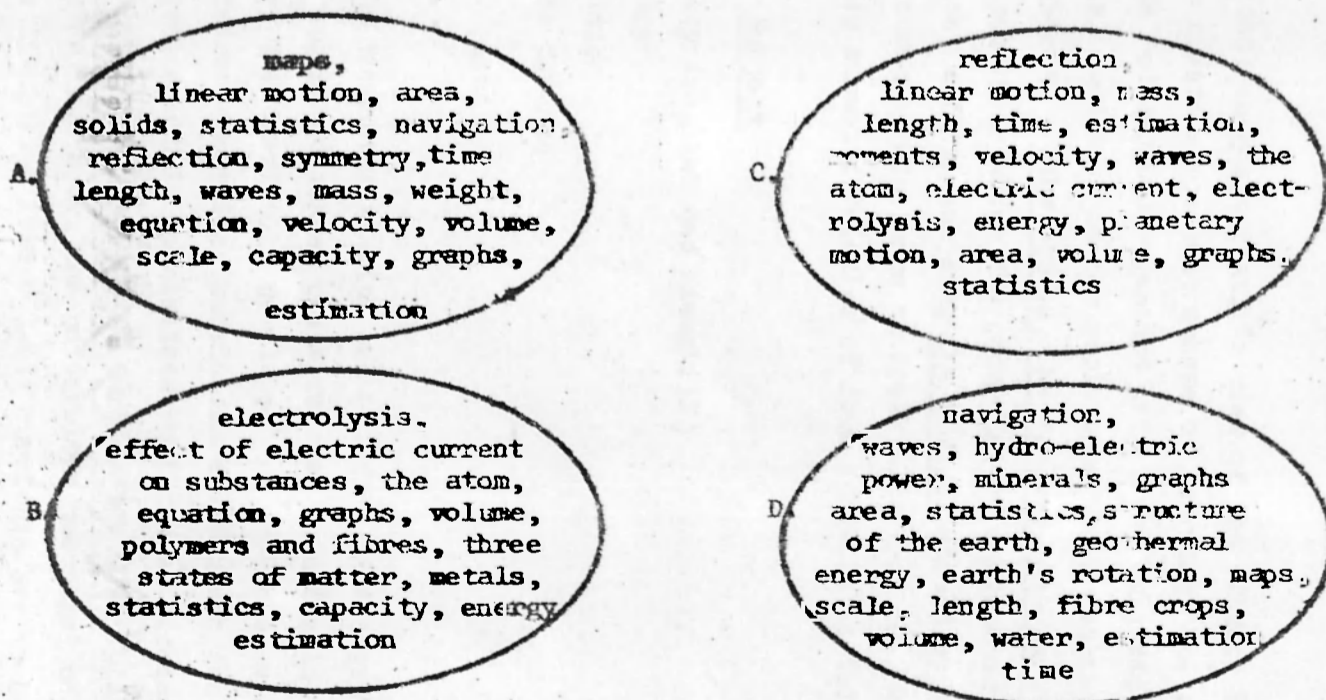
* Also appears in Geography - 'Population and Settlement; Management and Conservation of the Environment', Biology - 'Ecology' and Home Science - 'Environmental Hygiene'. This is the central theme of the Physical and Biological Sciences (including Agriculture).

** Also covered in the syllabuses for Art and Design, Literature (English and Kiswahili) and Music.

*** In the Home Science Syllabus; 'The Home, Family and the Community' is a major topic.

Source : Secondary School Syllabuses, Ministry of Education Science and Technology, July 1985.

Figure 27. : DUPLICATED CONTENT AND LEARNING SKILLS IN THE 8-4-4 SECONDARY SYLLABUSES FOR MATHEMATICS, GEOGRAPHY AND PHYSICAL SCIENCES.



The four ellipses contain topics and learning skills in the 8-4-4 Syllabuses for Geography, Mathematics and the Physical Sciences. The Physical Sciences 'neatly' divide into a Physics and a Chemistry Section.

(1) Can you identify the subjects represented by A, B, C and D?

(2) In which ellipses do the following topics in other 8-4-4 secondary syllabuses fit?
Home Science : 'Detergents and Laundry Agents', 'Lighting', 'Heating'
Biological Sciences: 'Chemicals of Life', 'Gaseous Exchange'.
Art and Design: 'Fabrics', 'Ceramics'.
Music : 'Time', 'Pitch', 'Rhythm', 'Harmony'.

Source : Secondary School Syllabuses, Ministry of Education, Science and Technology, July 1985.

The proliferation of subjects and the duplication of content across them call for a re-examination of the construction of curricular and learning/teaching methods in schools along lines closer to traditional African education. In contrasting western formal schooling and traditional methods of learning Kenyatta (1938) describes the latter as follows:

'the child is not handicapped by attending school and listening to formal instruction which is for the most part unrelated to his interests and needs. As he roams the country-side he learns to distinguish a great variety of birds, animals, insects, trees, grasses, fruits and flowers. (As he participates in the life of his family, he learns) the trees that are good for firewood or building, for supporting yams or propping bananas, those that resist white ants or make the best bee-hives, stools or grain mortars and pestles'. (49)

King (1985) suggests that, in view of the advance in automation and the need to create a coherent scheme of learning, the school curriculum could be reduced and organised into a few subjects which define the essential functions of the society served by education. He suggests four subjects - 'The Office, The Factory, The Farm and The home'⁽⁵⁰⁾ For a country in which the promotion of nationhood is a major goal of education, a fifth subject, The Nation, should be added. Roberts (1984), with a certain reluctance to break away from the 'known', suggests a secondary school curriculum of four subjects as follows:⁽⁵¹⁾

<u>Subject</u>	<u>Periods Per Week</u>
Literacy (English and Kiswahili)	13
Numeracy	7
Humanities	8
Applied Science	12
Total	<u>40</u>

The conceptualisation and building of integrated curricula, such as suggested above, calls for new thinking in the existing machinery for curriculum development. In Kenya as well as in many other African countries, curriculum development tends to be an inbred exercise within specialised educational circles - usually personnel from the curriculum development institution, the inspectorate, the examinations body, the university, teachers' colleges and schools (Roberts 1984, King 1985.)⁽⁵²⁾ If curricula are to be restructured so as

155/4 105

to properly reflect all the needs of society, the conceptualisation of the goals and to a large extent the identification of subject components should involve the participation of people from different walks of life, not just educationists. Yoloye (1984) suggests that curricula goal setting should include the analysis of data from the ministry of education as well as other ministries: demographic data (ministry of economic planning), agricultural development data (ministry of agriculture), data on the status of health (ministry of health) and employment data (ministry of labour).⁽⁵³⁾ The list should be expanded to include the rest of the public service, the urban and rural private sector (large and small firms and farms and the informal sector) and social organisations (religious bodies, the ruling party, welfare organisations etc). Particularly important in conceptualising curricula is the need to take into account the structuralist observation that education is organised to benefit a few powerful groups in society. The tendency, noted by King (1985)⁽⁵⁴⁾, for vocational and practical syllabi to take into account the interests of the public sector and large firms (in particular multinationals) and farms, and to ignore the informal sector and the rural (largely subsistence) population, should be guarded against.

The advantage of thorough integration of curriculum is that both the internal and external efficiency of learning would be improved. A few subjects in the curriculum to which every student is exposed should maximise the utilisation of time and learning resources in schools. In terms of the external efficiency of education, an integrated curriculum should assist learning to resemble more its raison d'être, life outside the school.

The implementation of the 8-4-4 system should be accompanied by research which aims at curriculum coherence through the streamlining of the plethora of subjects which various specialists have planned to offer. Such research should carefully examine the implications of integration on serving teachers, teacher education and higher education. The following hypotheses to guide research in this area come to mind:

- The 8-4-4 (primary/secondary) curriculum is internally and externally inefficient in terms of
 - (a) use of learning time;
 - (b) use of learning resources;
 - (c) facilitating the internalisation of knowledge and its transfer to life after school.

- The 8-4-4 (primary/secondary) curriculum and teaching methods are oriented to the modern sector and largely ignore the needs of the rural population and the informal sector.
- An integrated school curriculum can adequately serve both terminal and further education goals.
- Pre-and in-service training of teachers can successfully be employed to prepare teachers to guide learning in an integrated school curriculum.

Education, Training and Self-Employment

In successfully relating school education to self-employment it is necessary for careful consideration to be given to the interaction between the social and economic opportunity structure in society, the school curricula and the teaching/learning methods.

The goal of preparing students for self-reliance in work after school has to a large extent been dictated by the failure of the modern sector to generate employment as fast as the education system produces aspirants. The empirically untested assumption is that educational institutions can, by imparting certain skills and attitudes, prepare learners for self employment. There is danger that education for self-reliance could turn out to be a new version of the human capital theory. There is plenty of research evidence that the notion, common in developing countries, of vocational education as preparation for work (both wage and self-employment) is largely a myth (Forster 1965 and 1969, Court and King 1978, Psacharopoulos and Loxley 1984, Cooksey 1985).⁽⁵⁵⁾ The decisive factor with regard to the work destination of school leavers seems to be the social and economic opportunity structure in society and not the content of learning or training, an observation which accords more with the structural and screening theories than with the human capital theory. In a study of informal sector potential for training in carpentry and metalwork in Nairobi, Ndua and Ng'ethe (1984) found that recruitment of trainees was significantly influenced by 'friendship' (ethnicity?) and familial relationship: 53.5% of responses from firm owners with trainees indicated that the selection of trainees was on the basis of friendship or relationship. Much more important, the study marshalls data to show that capital is an important factor of success in the informal sector:

'Data from the business owners show unequivocally that training or skills acquired do lead to more output and thus more incomes.. However, while recommending training, we must re-emphasize the findings that skills only lead to increased welfare if they are utilised in conjunction with capital. Thus, whoever is committed to increased welfare in these two sub-sectors, must also not only be committed to skills acquisitions, but also equally committed to looking for the complementary capital.'⁽⁵⁶⁾

As part of the widely based conceptualisation of curricula goals, the viability of general education as preparation for self-employment must receive due attention. Research data which analyse the structure of opportunities in self-employment must be an integral part of the curriculum development process. Such data should provide answers to the following questions:

(1) What hurdles face those attempting to go into self-employment?

What concrete measures can be employed outside the education ministry to enable aspirants to overcome these hurdles?

(2) What opportunities for self-employment exist? How could these

be expanded and in which other spheres could new opportunities be opened up? Ndua and Ng'ethe suggest that opportunities and incomes in the urban informal sector could be increased through improved design of products so as to avoid 'copying technology from outside' and by gearing production to agricultural implements as opposed 'to primarily producing urban services and consumer items'⁽⁵⁷⁾

As they rightly point out, improvement of the informal sector along such lines has capital, marketing and training implications,

Armed with data which maps out the external opportunity structure, the curriculum development process should then enter into a second stage, the consideration of relevant approaches in schooling. Again research should be employed to answer a series of questions:

In what ways can education for self-employment be presented as a desirable ideal, (a need as defined by Tyler 1949⁽⁵⁸⁾) rather than a second best to the ideal of certification at the highest level and a highly paid status job? There is evidence to suggest that self-employment is not accepted by many students and sections of the Kenya society as an ideal. Recently Ogutu (1985) found that self-employed school leavers in Kisumu and Siaya districts were looked down upon by the rest of the community for failing to find jobs in the formal sector of the economy.⁽⁵⁹⁾ Solutions to this problem must be visualised by the planner as not being entirely internal to education. Research

into a viable scheme for the education of the whole community as to the usefulness of self-employment is called for. It must quickly be pointed out that such a scheme would be a non-starter if it is not accompanied by a defined and concrete opportunity structure which the community sees as attractive. The planner must not be lost to the strong possibility that the community may be subconsciously interpreting the social and economic reality along structuralist lines.

Internally the educational planner must look for empirically based answers to questions on the relationship between education and the self-employment ideal: (1) What skills and attitudes do students need to develop in preparation for self-employment? (2) How best are such skills and attitudes incorporated in the learning content? (3) Are schools and teaching as currently organised capable of developing the necessary self-reliance skills and attitudes? For example, does the hierarchical and somewhat authoritarian organisation of schooling lend itself to the development of initiative and creativity in students? In what ways could schooling be reformed in order to prepare learners for self-reliance? Again the educational planner is warned to take into account the structuralist observation that the organisation of schooling may be a reflection of society at large.

As implied in the fore-going, research and planning of education for self-employment has multi-disciplinary implications. Better results would be achieved if educationists worked together with sociologists, economists, industrialists, agriculturalists and general planners.

Examinations Reform

As underscored by the screening theory, examinations have a great deal of influence on the implementation of curricula. Past examination papers can in fact be regarded as the effective curriculum. The great influence of examinations in developing countries reflects the opportunity structure in society: examinations are used as the fairest method of allocating the small (relative to the number of aspirants) number of opportunities in the modern sector (Court and Kinyanjui 1978).⁶⁰ If reforms are made to make self-employment an attractive alternative to wage employment, as has been suggested above, the competitiveness and distortion of learning associated with examinations would be considerably reduced; examinations

could be used more as an aid to learning and less as an allocation tool.

While this paper has taken the line that reform should be carefully planned at all stages, it has maintained the view that the translation of theoretical precepts into viable policy should be seen as having more than one side. In this spirit and in view of the fact that reform of the opportunity structure as an ideal base for reform in examinations may take some time to achieve, practical aspects of the on-going reforms in the mode of assessment are discussed below. Some fallacies are pointed out and suggestions for research and development made.

Continuous Assessments

Continuous assessment is to be implemented as one of the controls on the ill effects of examinations. The challenge here is that proper implementation should visualise the exercise as more than requiring teachers' periodic assessments of their students. Assessment is a highly technical process and requires detailed professional preparation, particularly if the grades are at some stage to be used for the summative purpose of certification. Action research is needed along the following lines:

(1) As a basis for the preparation of a systematic and detailed plan of assessment: Who is to assess? What training does the assessor need? What form should the assessment take? What is to be the regularity of assessment? In what form and when should grades be forwarded to the central examining authority? What proportion should continuous assessment contribute to the final certificate grade? What is the rationale of this proportion vis-a-vis that of the score obtained from the end of course external examination? What are the appropriate statistical methods of marrying the two sets of scores?

(2) Does the fact that a teacher has to summatively assess his class have a negative effect on the teacher - pupil relationship? Campbell (1976) found that where a teacher combines his role as promoter of learning with the role of arbiter of the final certificates to be awarded to his pupils, the desired father-son relationship can be strained so much that the classroom acquires the atmosphere of a courtroom. (61)

(3) How does the teacher's involvement in the summative assessment of his pupils affect his standing in the society? If his pupils in the end fail to obtain a certificate or are not selected for further education, did the teacher assess them harshly and unfairly or did failure reflect lack of application/aptitude on the part of his pupils? Can the teacher retain his personal and professional integrity when many parents will do anything, including corrupting those with responsibility for assessment, to ensure the certification or selection of their children? The effects of assessments and examinations on learning, which the proponents of the screening theory highlight, must be seen in light of this dimension. So long as 'to pass' means qualifying for admission to higher education and hence to high status employment, pressure to corrupt the conduct of assessment will remain intense. Dave and Hill (1974), writing on the social dynamics of the examination system in India, point out that such pressure is real:

'Students often feel that passing marks must be attained at any cost... There are numerous cases of mass copying in the examination hall, or signaling of answers, or dictation of answers over loudspeakers outside the building. Invigilators are intimidated by threats and sometimes subdued by physical force. Bribes have been offered to examiners, and economic and political pressure brought to bear by parents?.(62)

One way in which the teacher - pupil relationship and the integrity of the teacher could be protected is to explore and experiment with ways in which a teacher seeks the assistance of colleagues (in the same school or preferably neighbouring schools) when making assessments for certification purposes. An assessment system similar to that employed in secondary modern schools in England (Mode 3) could be developed.

(4) How does the introduction of continuous assessment as part of the certification process affect the establishment and the maintenance of nationally acceptable standards? Commenting on the Common Entrance Examination⁽⁶³⁾ in colonial Kenya, Beecher (1949) points to the problems which arise when loosely organised examination systems are faced with increase in candidatures:

'When that examination was started, it was intended to secure that those admitted to the Junior Secondary Schools were about the same standard... The candidates, though numerous, were not so numerous as to place on the examiners an impossible burden of marking; but of late years, the number of candidates has grown enormously and the examination organisation has

broken down. Features of this breakdown (include):-

- (a) The question papers are known in advance.
- (b) Candidates are so closely packed in the examination rooms that proper supervision is impossible and cheating is common.
- (c) The marking of the papers lacks uniformity and is often of a poor standard.⁽⁶⁴⁾

Since Becher's time candidatures have grown enormously, necessitating a much more centralised examination system. However, inspite of centralisation problems not unlike those described in 1949 remain. Those familiar with the conduct of national examinations in developing countries know that there are problems in establishing fair and acceptable standards under the umbrella of centralised examining bodies. Three of these problems - cases of irregularity in the field administration of examinations, a wide range in the quality of schools and candidates, and short-comings in the co-ordination of marking particularly where large numbers of examiners are involved - are acute. The sudden introduction of continuous assessments as part of the certification process in the large candidature examinations in Kenya, e.g. those at the end of the primary and secondary courses, would loosen the examination system thereby exacerbating the above problems. A planned step by step approach in introducing continuous assessments as part of certification is needed.

(5) How could continuous assessments be employed as measures of non - cognitive aspects of learning? This is a particularly tricky area when the ranking of students, for example in relation to selection for employment, training or further education, is intended. The problem becomes magnified if large numbers of students and assessors are involved. However, the area is important and therefore needs to be subjected to research and development.

Reform of the Examinations Taken at the End of Courses

Action research in examinations should be seen as involving the end of course tests. Kenya is lucky in this respect in that, as Somerset (1982)⁽⁶⁵⁾ shows, considerable experience has been gained. The basic idea is to ensure that the contents of examinations test for the acquisition of relevant knowledge and the development of desired skills, such as reasoning. The research operations involved include: thorough analysis of candidates' work in preceding examinations, an

empirical understanding of how learning/teaching takes place in schools, concerted efforts through feedback to influence and guide teaching/learning into desirable channels, using analysis of candidates' work and other research data in developing good question papers for future examinations and providing feedback to curriculum development.

One major advantage which externally conducted examinations should have over continuous assessments in schools is that the former could be more beamed on the goals of education such as self-employment. Although an effort has been made for the Kenya examinations to take into account the external criteria - 'generalized intellectual abilities and skills which serve (the learner) in many new situations' (Bloom 1956)⁽⁶⁶⁾ - many of the externally set papers remain beamed on the process of schooling. So long as the titles of examination papers remain the same as those of subjects in the curricula, the examinations will to a large extent continue to measure schooling rather than the development skills for living. At the grading stage the basic question will remain, 'Has the paper adequately covered the content of the syllabus? rather than, 'Has the paper fully measured skills and abilities required by the goals of education?' Consideration, backed up by research, should be given to developing for the primary or secondary course a few papers, with new titles and different from those of subjects, which test for the development of intellectual competence necessary for life and not syllabus content. This would make it unnecessary for subjects in the curricula to be classified as 'for examination' or 'non-examination', since any learning which is relevant to life would be examinable. Teachers could then guide learning rather than prepare students for passing examinations.

CONCLUSION

If nothing else, this paper should raise doubt as to the existence of a linear relationship between education and development. The existence of at least four theories, which have been very sketchily touched upon here, is an indication that there is hardly any agreement on how a country should educate for the labour force, or for self-employment, or for individual growth, or for national development. Given this uncertainty, the educational planner must rise above any of the theories by academics which try to explain education and development. Planning must reconcile the human resource emphasis on an educated and trained labour force as the key variable in economic development with the structuralist assertion that capital, backed up by the political system, is the dominant factor in the direction education and development take. The planner must suspect that progressive claims that by reforming curricula and examinations and improving teaching methods, education could be made to serve society better, may fall short of the whole truth in that they might not sufficiently emphasise the need for a broad base for these reforms. At the same time and in the opposite direction, the planner must not be so blinded by the screening theory that he cannot recognise that in-house examination reforms which gear learning to the development of important intellectual competence, e.g. reasoning skills, can have a profound effect on education and its aftermath.

Through the 8-4-4 system of education, Kenya is attempting to implement school curricula aimed at the simultaneous achievement of the country's goals of education. The efforts being made are steps in the right direction, but they should be regarded as the first steps in a long journey. The journey needs to be evaluated as it proceeds so that the intended destination is eventually arrived at. Research and development is called for in both the conceptualisation of curricula and the delivery system in schools. Particularly important is research and development geared to the need to broaden the curriculum development process so that expertise and data from non-educational walks of life are brought in. This should assist the planning of education in two ways. First the in-bred and specialist domination of curricular processes by educationists would be reduced:

curricula would be brought closer to real life and the internal efficiency of education improved through the development of content and skills which are integrated in broad, fewer, new and relevant subjects of study. Secondly, broad based curriculum development should lead to serious consideration of the social and economic opportunity structure in society. This is essential as curricula for, inter alia, self-reliance are conceptualised, developed and implemented. In the long run the success of reforms in the school system lies in the realisation that such issues as teaching, learning, attitudinal growth, assessments and examinations are essentially responses to the structure of opportunities in society.

NOTES

1. In this paper education is taken to mean general education as opposed to specialised vocational training.
2. See for example, King K.: The African Artisan: Education and the Informal Sector in Kenya, London, Heinemann 1977; Fransman M. & King K. (eds): Technological Capability in the Third World, MacMillan 1984.
3. I.L.O.: Employment, Incomes and Equality: A Strategy for Increasing Productive Employment in Kenya, Geneva 1972. Republic of Kenya: Report of the National Committee on Educational Objectives and Policies (N.C.E.O.P.) Government Printer Nairobi, December 1976
Republic of Kenya : Development Plan 1984 - 1988. Government Printer Nairobi.
4. Colclough C.: Primary Schooling and Economic Development: A Review of the Evidence, World Bank Staff Working Paper No. 399, 1980.
5. World Bank: Education Sector Policy Paper, 1980.
6. Kenneth King recently observed the strong faith of African governments in the teaching of science as the road to industrial take off - Manpower, Technology and Employment in Africa: Internal and External Policy Agendas, Centre for African Studies Edinburgh University, February 1985.
7. Medvitz A.G.: Problems in the Application of Science Education to National Development - Paper presented at University of Nairobi I.D.S. Seminar, August 1985.
8. Republic of Uganda: Report of the Uganda Education Commission, 1963. The N.C.E.O.P. (op.cit.) recognised that in order for education to assist rural development, school leavers need to be attracted to rural life through 'an appropriate policy covering wages, salaries, rents, interest rates and profits' - p.12
9. Kinyanjui K.: Education and Development in Africa: Theories, Strategies and Practical Implications, University of Nairobi IDS Working Paper No. 375, September 1980.
10. Henchey N.: The Search for Coherence in General Education, Prospects - Quarterly Review of Education Vol. XI No. 3 UNESCO, 1981.
11. Shultz T. : Investment in Human Capital, American Economic Review, 1961.
12. Becker C.: Investment in Human Capital : A Theoretical Analysis, The Journal of Political Economy, October 1962.
13. Harbison F. & Myers C.A. : Education, Manpower and Economic Growth: Strategies in Human Resources Development, McGraw-Hill, New York 1964.
14. Blaug M.: Economics of Education : Selected Readings, Penguin Books, 1968.
15. Bowman M.J. et. al. : Readings in Economics of Education, U.N.E.S.C.O., 1968.
16. Harbison and Myers, loc. cit. - p. 14.

17. Simmons J. : Investment in Education: National Strategy for Developing Countries, World Bank Working Paper No. 196, February, 1975.
18. See Republic of Kenya: High-Level Manpower Requirements and Resources 1964-1970; Development Plan 1966-1970:
19. Republic of Kenya: Report of the Kenya Education Commission Part II, 1965 - pp.(v) & 3.
20. Report of the N.C.E.O.P., op. cit. - Table 9.2 on page 90.
21. Republic of Kenya: University Education in Kenya - First Report of the 1980 - 1983 University Grants Committee, March 1981 - Table II on page 8 and Table XXII on page 46.
22. World Bank: Kenya-Growth and Structural Change, 1983 - This study points out that 'Since the early 1970s growth has slowed down, averaging 4.1% per year during 1972-80 as compared to 6.5% for 1964-72' - p. xi.
23. Eg. Report of the N.C.E.O.P., op.cit.
24. Structural theory is to be found in many scholarly works, but the following have played a major role in developing it - Bowles S & Gintis H. : Schooling in Capitalist America: Education Reform and the Contradictions of Economic Life, New York Basic Books 1976; Jencks C. : Inequality, Basic Books, 1972; Braverman H. : Labour and Monopoly Capital : The Degradation of Work in the Twentieth Century, New York, Monthly Review Press, 1974.
25. Moncada A. : Education and Development, Prospects, op.cit. p. 153.
26. Weis L. : Education and the Reproduction of Inequality: The Case of Ghana, Comparative Education Review Vol. 23 No. 1, 1979.
27. Kinyanjui K. : Education and Development in Africa, op.cit. p. 37.
28. Court D. : Educational Research Environment in Kenya, in Shaeffer S. & Nkinyangi J.A. (eds): Educational Research Environments in the Developing World, International Development Research Centre, Ottawa 1983.
29. Ibid. - p. 172.
30. Ogot B.A. : Three Decades of Historical Studies in East Africa, 1947-1977, Kenya Historical Review - Journal of the Historical Association of Kenya, Vol. 6 No. 1 and 2, 1978 - p. 31.
31. Schmidt A : Geschichte und Struktur : Fragen einer Marxistischen Historik (History and Structure - An Essay on Hegelian - Marxist and Structuralist Theories of History) Carl Hanser Verlag, Munich 1971. Translated into English by J. Herf and published by the M.I.T. Press, Cambridge Massachusetts, 1981.
32. Moncada A. : Education and Development, op.cit. - p. 288,

33. Rado E.R. : The Relevance of Education for Employment in Court D. and Ghai D. (eds) : Education, Society and Development - New Perspectives From Kenya, Oxford University Press, 1974.
34. See for example : Dore R.P. : The Diploma Disease, London, Allen and Unwin, 1976.
35. Court & Ghai, op. cit. - p. 5
36. Ghai D. : Towards a National System of Education in Kenya, loc. cit. = p. 326.
37. Republic of Kenya: Report of the Kenya Education Commission Part I 1964 - p. 25
38. Objectives at the secondary level are expected to build on the learning experienced in the primary school. The goals of education and objectives of primary education are spelled out in considerable detail in Syllabuses for Kenya Primary Schools - Standards VII and VIII, Ministry of Education, Science and Technology 1984.
39. Ibid.
40. Kenya National Examinations Council: Kenya Certificate of Education Regulations and Syllabuses, 1985/86. A school candidate who sits for the examination for the first time is required to offer, in addition to the two compulsory subjects, one subject from the humanities (Literature - either in English or Kiswahili, Religious Education, History, Geography and Commerce) and one science subject (physical or biological).
41. 8-4-4 refers to the number of years in each sector of education: 8 in primary, 4 in secondary and at least 4 in university. The new system will replace the current 7-4-2-3 one : 7 in primary, 4 in lower secondary, 2 in upper secondary and at least 3 in university.
42. Candidates who choose Business Education will not be able to offer a cultural subjects. According to the reasoning which has guided the development of the new curriculum, Business Education seems to fit in the same group as Industrial Education and Home Science, that is, if cultural subjects are to receive due emphasis.
43. Republic of Kenya: 8-4-4 System of Education, Ministry of Education Science and Technology, December 1984.
44. World Bank : Education Sector Policy Paper, 1980 - p. 54.
45. It is doubtful whether the extra year is adequate addition for primary schools to be able to cover the new curriculum.
46. Alexander L. & Simmons J. : The Determinants of School Achievement in Developing Countries : The Educational Production Function, World Bank Staff Working Paper No. 201, March 1975.
47. Republic of Kenya : The Organisation of School Curriculum in Non - Technical Schools, Ministry of Higher Education Inspectorate, October 1980 - p. 15.

48. Whitehead A.N. : The Aims of Education and other Essays, London, Ernest Benn Ltd, 1962 - p. 10.
49. Kenyatta J. : Facing Mount Kenya - The Tribal Life of the Gikuyu, Secker and Warburg London 1938 - p. 105. Numerous publications carry similar descriptions of traditional African education, see for example : J.S. Mbiti : African Religions and Philosophy, Heinemann London 1969; J.P. Ocitti : African Indigenous Education as Practised by the Acholi of Uganda, East African Literature Bureau, 1973.
50. King K. : The Planning of Technical and Vocational Education and Training, I.I.E.P. Occasional Papers U.N.E.S.C.O., 1985 - p. 11.
51. Roberts I.K. : A Suggestion for the Secondary Component of the 8-4-4 System, Kenya National Examinations Council (mimeo) 1984.
52. Roberts I.K. : A Suggestion for the Secondary Component of the 8-4-4 system, op.cit. : King K. : Manpower, Technology and Employment in Africa, op. cit.
53. Yoloye E.A. : The Role of Research in Curriculum Development in Anglophone Africa (mimeo), 1984.
54. King K. : The Planning of Technical and Vocational Education and Training, op.cit.
55. Forster P.J. : The Vocational School Fallacy in Development Planning, in Anderson C.A. & Bowman M.J. (eds) : Education and Economic Development, Chicago Aldine 1965.
: Education for Self-Reliance : A Critical Evaluation, in Jolly R. (ed.) : Education in Africa : Research and Action, East African Publishing House, Nairobi 1969. Court D. & King K. : Education and Production Needs in the Rural Community : Issues in the Search for National System, I.I.E.P. Working Paper, UNESCO 1978 (The paper discusses three fundamental aspects of Tanzania's struggle to achieve a national system based on the needs of rural communities : the integration of work and education, the decentralisation of educational decision-making and the modification of the selection and opportunity system). Psacharopoulos G. and Loxley W: Diversified secondary Education and Development - A Report of the Diversified Secondary School Curriculum Study, Education Department., The World Bank 1984. (The study analyses data on Columbia and Tanzania). Cooksey B. : A Critical Review of Policy and Practice in Tanzanian Secondary Education Since 1967 (mimeo) 1985. (A comprehensive review of the literature on the Tanzanian Education for Self-Reliance ideal).
56. Ndua G. & Nj'ethe N. : Education, Training and Welfare in the Informal Sector : A Study of Carpentry and Metal Work in the Eastlands of Nairobi Kenya, I.D.S. University of Nairobi, November 1984.
57. Ibid. - pp. 83-84

58. Tyler R.W. : Basic Principles of Curriculum and Instruction, The University of Chicago Press 1949. He suggests that studies of the learner is one of five sources of educational objectives; (the other four are 'studies of contemporary life, suggestions from subject specialists, educational and social philosophy and psychology of learning') He defines need as follows: 'Studies of the learner suggest educational objectives only when the information about the learner is compared with some desirable standards, some conception of acceptable norms, so that the difference between the present condition of the learner and the acceptable norm can be identified. This difference or gap is what is generally referred to as a need' - p. 6.
59. Ogutu G.E.M. : Education and Rural Development: A Study of the Quality of Secondary School Education and its Relevance to Self-Employment in the Rural Areas of Kenya, Kenyatta University, 1985.
60. Court D. and Kinyanjui K : Development Policy and Educational Opportunity: The Experience of Kenya and Tanzania, International Institute of Educational Planning, UNESCO 1978
61. Campbell W.J. et al. : Some Consequences of the Radford Scheme for Schools, Teachers and Students in Queensland, Australian Advisory Committee on Research and Development in Education, Canberra 1976.
62. Dave R.H. & Hill W.H. : Educational and Social Dynamics of the Examination System in India in Comparative Education Review Vol. 18 No. 1, February 1974-p. 31
63. The Common Entrance Examination was taken at the end of the fifth year of primary school.
64. Kenya Colony and Protectorate : African Education - Report of a Committee Appointed to Inquire into the Scope, Content, and Methods of African Education, its Administration and Finance and to make Recommendations, September 1949 Chairman L.J. Beecher - p. 40.
65. Somerset H.C.A. : Examinations Report : The Kenya Experience - A Report Prepared for the World Bank, June 1982.
66. Bloom B.S. (ed.) : Taxonomy of Educational Objectives, Book 1 : Cognitive Domain, Longman 1956 - p. 40.

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