

THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

Curriculum Reforms in Kenya: Efforts at Attainment of Relevance in Education

Godfrey S. Mse

Associate Professor, Kenyatta University, Nairobi, Kenya

Abstract:

Educational relevance is a critical variable in education. It defines education in the political, social, economic and technological context of the society it serves. It also justifies the expenses incurred in its provision. Over time, the Kenya Government has grappled with the issue of relevance in education. Several initiatives to align education and the needs of the society have been undertaken against a backdrop of population and technological growth, dwindling resources, and changing national and international political and economic dynamics.

This paper seeks to examine some curriculum changes that Kenya has undertaken over time, factors dictating the changes and the challenges impacting the changes.

1. Introduction

A curriculum must be seen to be relevant to the social, political and economic realities of the society it serves. This justifies its being studied and resources being expended on it. The question of relevance is at the centre of curriculum reforms undertaken in different societies. Reforming a curriculum is recognition of the non-static nature of the society as the social, political and economic realities of societies keep changing. The changes dictate a re-alignment of the curriculum so that it may be responsive to the prevailing needs of the society at a particular point in history.

There have been various curriculum reforms in Kenya since the introduction of formal western education. This paper highlights the reforms spanning the post- independence period. It focuses on the English Medium Project, Kenya Primary Mathematics, the Primary Education Project and the 8:4:4 education system.

2. The English Medium Project

The genesis of this reform may be traced back to the report of the Binns Education Commission which visited Eastern Africa in 1952. This Report stressed the need for introducing activity methods of teaching in primary schools (Sifuna, 1975). The classroom environment was supposed to be active with the teachers and learners engaged in constructive dialogue and activities in the teaching/learning process. The teachers had to be trained in activity methods in order to embrace these methods.

The call by the Binns Commission about a change in teaching methods happened to coincide with a feeling of disaffection that African and Asian children were performing poorly in examinations due to their inadequacies in comprehending English since they were taught in their first languages such as Hindi, Gujarati, Dholuo, Luhya etc. It was felt that the pupils performed poorly in examinations due to the fact that they could not transfer correctly concepts from their first languages to English which was the language of examinations.

In 1957, the English Medium Project was launched with the aim of introducing English as a medium of instruction throughout the school cycle. This was first to be done in the Asian schools and later in the African schools. The introduction of the English medium was accompanied by an "introduction of more progressive infant techniques including activity and group work....." (Ominde Commission Report, 1964). This development in methodology was also tried in the upper primary classes but the venture was not successful due to insufficient human and material resources.

When Kenya gained independence in 1963, the term English medium became politically sensitive and so it was christened New Primary Approach (NPA) to make it more acceptable. In essence, there were two components of the New Primary Approach; the use of English language as a medium of instruction from class I in the African and Asian schools and the methodological aspect which emphasised activity methods especially in the lower primary classes.

Much as the initiative sparked activity in school classrooms and the teachers and learners were engaged in some form of dialogue in the teaching/learning process, the New Primary Approach was faced with problems that eventually led to its being abandoned. One of the problems was that as the methods became adopted in more schools, there was need for more support from the stakeholders, especially the Ministry of Education, in terms of qualified manpower. The critical manpower needed were teachers and school inspectors trained or in-serviced in the new orientation. In addition, there was need for material resources in terms of books and teachers' guides. Both of these were not forthcoming in sufficient quantities and in good time.

Closely related to the above was the fact that more teachers and field officers needed to be trained in the new methodology demanded by the New Primary Approach and yet the resources for the training or in-servicing of these personnel were both inadequate and not

uniformly distributed in the country. Arising from this, the New Primary Approach became quite diluted and largely departed from its original mission. This led to heavy criticism of the approach-especially the English medium in the lower primary school classes. Eventually the English medium was abolished in March, 1976 through a circular from the Ministry of Education advising schools to use Mother Tongue as a medium of instruction in lower primary classes. While the English medium aspect of the reform was abolished, the activity oriented teaching methodology of the reform retained.

3. The Kenya Primary Mathematics (KPM) Project

The origins of the Kenya Primary Mathematics (also known as New Mathematics) may be traced back to 1955 when, in America, the National Science Foundation decided to research in areas of mathematics to help better their technology and weaponry. The foundation was of the view that old mathematics was out-dated and that there were new ideas on how children learnt mathematics hence the need for change.

At the same time, there had been intensive research at universities how aspects of the mathematics taught at higher levels could be brought down to primary and secondary levels. Therefore a number of projects were started; for example, the Science Mathematics Study Group (SMSG) was started at Stanford University while, in the United Kingdom, the School Mathematics Project (SPM) was started on similar lines. Seven years later, in 1962, there was a feeling that enough was known about mathematics and could be shared by outsiders, especially in Africa. Consequently, a conference was organized at Entebbe in Uganda to improve the quality of mathematics teaching and develop, in each participating country, a nucleus of people knowledgeable in mathematics capable of undertaking improvement of mathematics curriculum (Hawes, 1982:37). In the initial stages, workshops were held in Entebbe and elsewhere culminating, by 1969, in the production of text books for classes 1-7, manuals for teacher training. An alternative series for secondary schools was also produced.

In 1965, Kenya decided not to use the Entebbe series in its original form but to adapt it to the Kenyan situation. The then Mathematics Centre started the adaptation process by selecting 25 schools from Nairobi and Kiambu to pilot the materials. However, for unexplained reasons, this was suddenly stopped and, between 1966 and 1974, the next higher classes were to adopt the new mathematics texts. In 1970, the Minister for Education declared that all schools in Kenya should adopt new mathematics. At the time of this declaration, there were no text books for primary 4. In addition, the books available had not been tried out and adapted to the varying situations in the country. This elicited a strong reaction against the move. Nevertheless, the new mathematics curriculum was adopted in the schools. Ten years later, in 1980, the then President of Kenya, Daniel arap Moi, decreed that new mathematics be scrapped.

3.1. What was new in New Mathematics?

3.1.1. Content

While the body of the mathematics taught was the original body taught at any other time, the 'new in New Mathematics was that some topics which were previously taught at higher levels of the educational ladder had been cascaded down to the primary school. These topics included sets, probability and functions, bases, transformation, geometry and topology.

3.1.2. Methodology

New mathematics required learners and teachers to continuously engage in activities as they worked on different topics in the subject unlike in the old mathematics where, to a large extent, the learners were passive recipients of what was being taught.

3.1.3. Language

In a number of cases, the language used in new mathematics was 'alien' to the 'traditional' pupils and teachers. Words like 'translation' which they may have been used to in language lessons were now in mathematics-with a different meaning! In addition, there was a lot of symbolism in New Mathematics which pupils found hard to comprehend such as \leq , μ , \cap , \sum .

3.1.4. Curriculum Structure

In new mathematics, the spiral approach in teaching of mathematics was stressed, unlike the compartmentalized approach in old mathematics. It was recognized that one does not teach a concept at a certain level and then forget about it but keeps coming back to it and building new material upon it as he moves higher. As such, it was recognized that the maturity of a child changes and concepts too change but within the same topics.

These may be said to have been the 'new' aspects in New Mathematics. It is evident that new mathematics called for a wholly new approach to an otherwise same 'old' subject-and content-of mathematics.

3.2. Reaction to New Mathematics

A consideration of statements made in the Kenyan media between 1975 and 1981 on new mathematics reveals that the reaction was diverse. There were those who were for and against new mathematics. Another group may have been of those who were ambivalent.

3.2.1. Those for and Their Reasons

One of the reasons advanced by those for the idea of new mathematics was that new mathematics prepared children the computer and space age. In order to accelerate the speed of mechanization, it was necessary to know the basic principles of new mathematics. The

computer, which works in the binary system, showed that those who had a background in new mathematics understood it more quickly. This view seemed to have permeated the article in the Standard newspaper which stated, inter alia, that the rationale of teaching new mathematics was to put the Kenyan schooling youth in line with those of the world's most developed nations

Yet other writers had the view that new mathematics had an edge over old mathematics because it involved children in problem solving techniques and they, therefore, advocated for it being taught. They felt that the main difference between new and old mathematics did not lie in the subject matter but the teaching method. New mathematics involved more practical approaches as opposed to the abstract and haphazard methods in the teaching of old mathematics (Kariuki, 1981)

A third reason for backing new mathematics was that new mathematics methodology required use of many teaching aids which facilitated easier understanding of concepts than old mathematics methodology where teaching aids were rarely used. This may be illustrated by the following two examples

- i. Concepts of Addition and Multiplication –(in traditional mathematics)
 - a) $2 + 2 = 4$ (is easily understood)
 - $2 \times 2 = 4$ (may be accepted by the pupils but there would still linger some elements of incomprehension for, although the figures are the same, there is a difference in the mathematical signs)
 - b) $3 + 4 = 7$ (is easily understood by the pupils)
 - $3 \times 4 = 12$ (may not be easily explained by the teacher. The teacher cannot explain why $3 + 4$ is different from 3×4 without use of counters, sticks etc.
- ii. Addition of Figures to "Nothing (Blanks)"

In old mathematics, a problem such as $0 + 5$ could elicit a wrong response from a pupil not because he does not understand it but he has confused concepts. A pupil is likely to tackle the problem thus

$0 + 5 = 6$ (since the pupil may think in terms of 1 zero + 5 zeros = 6 zeros.

In new mathematics, this problem catered for thus

$\square + 5 = 5$. A class one pupil thinks $0 + 5 = 6$ because 0 is a numerical figure just like 5 but he treats $\square + 5$ differently because \square is not a numerical figure.

3.2.2. Those against and Their Reasons

One reason that was cited as having been one of those that accounted for the failure of new mathematics in the United States was also cited in Kenya by those who were opposed to new mathematics. The reason was that with new mathematics, parents could not guide children in their homework as the children appeared more learned than the parents who had not been tutored in new mathematics. Some parents lamented that their children could do common sense sums such as deducting 40 from 100 to have a balance of 60. Although this is obviously an exaggeration on the part of the pupils' performance, it would seem that for some commentators, new mathematics could not be immediately applied to an individual's everyday life.

Another reason which oscillates around the question of relevance was that new mathematics could neither be directly applicable to some jobs like in accounting or some courses like engineering or subjects like chemistry and physics. Professor Alala, in the Daily Nation of 6th January, 1981, stated that some university students brought up on new mathematics were particularly poor in integral and differential calculus. This view seemed to be shared by Anyona (1981) who was equally of the feeling that education must be linked to the production system; to produce technically qualified graduates. He was of the opinion that new mathematics could not be applied in accounts and engineering because of the base, for example, in the binary base, $1+1=10$ which clearly shows the dichotomy between new mathematics concepts and reality.

The issues raised above point at fundamental concerns regarding new mathematics. Some of the concerns relate to content, methodology, mathematical language, materials and personnel.

1. Content: The content of mathematics, like of any other subject, should be relevant. The content should be utilitarian; the content should be related to the functions the learner is expected to play in life. The content should enable the learner to perform these functions relatively easily. On the other hand, the pitching of the new mathematics content was deemed too high for an average child. Coupled with the dearth of relevant materials and personnel, new mathematics exerted inordinate strain on the learners in an effort to cover the syllabus and understand and apply the content.
2. Methodology: Mathematics is largely a problem solving subject. It requires the teachers to guide their pupils towards the solution of problems. It is acknowledged that the methods adopted in new mathematics were activity centred save for the scarcity of resources and personnel to facilitate effective active learning.
3. Language: Every subject has its own register. As such, the language used must not only be relevant to the subject but also to the pupils. For example, 'set' in mathematics may not be a problem to a secondary school student but it certainly would be a challenge to a primary I pupil. To such a pupil, the word 'group' could have been more appropriate. Therefore, the language of new mathematics was, in some cases, an additional challenge to the learners.
4. Materials: A major drawback of traditional mathematics was the limited utilization of support materials such as text books and teaching aids. It is also noted that the piloting of new mathematics was not completed before large scale implantation of the Kenyan version of new mathematics. By the time the Minister of Education decreed full scale implementation, there was lack of relevant materials for all levels of the primary and secondary school cycles. This severely hampered optimal implantation of new mathematics.

5. Personnel: Curriculum developers, teachers, inspectors of schools and other staff are an important component of an effective educational system. As such, the personnel must be appropriately qualified in their fields of work. A major handicap with the introduction of new mathematics was the failure to provide adequately qualified teachers to handle the subject. The old teachers were sparingly in-serviced and therefore approached the new mathematics in the old fashion of traditional mathematics. This proved to be ineffective.

4. Primary Education Project (PEP)

Immediately after political independence, education was seen as a key variable in the economic development of the country, especially in so far as equipping Kenyans with appropriate skills, knowledge and attitudes related to specific vocations. Academic subjects and examinations were highly viewed with the aim of getting adequate manpower to fill up positions in the civil service left vacant by departing expatriates.

By the mid-1970s, most of the so called 'white collar' jobs had been filled and 'educated unemployment' was clearly visible. This prompted the government to appoint the National Committee on Educational Objectives and Policies (NCEOP) in 1976 with the mandate of reviewing the priorities in education. The Committee recommended among others

- The development of literacy and communication skills through teaching languages (Mother tongue, English, Kiswahili)
- The development of scientific outlook through the study of general science
- The development and acquisition of social and cultural knowledge skills through teaching history, geography, civics, religious education, art, music and craft
- The acquisition of work-oriented skills through teaching vocational subjects such as agriculture, business education, home science, art and craft

As part of a followup to the Committee's recommendations, in 1978, the then Kenya Institute of Education which currently has been renamed Kenya Institute of Curriculum Development (KICD) launched the Primary Education Project whose aims were to develop a new primary education curriculum including teacher training; improve teaching and learning facilities and develop more relevant examinations.

As a guide to the development of the curriculum, the project team identified the following as objectives of primary education in Kenya.

- (i) To enable the child acquire literacy, numerical and manipulative skills
- (ii) To enable the child develop self-expression, self-discipline, self-reliance and utilization of senses
- (iii) To enable the child develop clear and logical judgment
- (iv) To develop in the child the desire to continue learning
- (v) To enable the child acquire basic foundation for work in the context of national economic and manpower needs
- (vi) To enable the child develop desirable social attitudes
- (vii) To enable the child develop respect for and appreciate the value of labour
- (viii) To enable the child to develop an awareness and understanding of the immediate environment
- (ix) To enable the child grow into a strong and healthy person
- (x) To enable the child develop a constructive and adaptive attitude to life
- (xi) To make the child appreciate his and other people's cultures
- (xii) To enable the child grow towards maturity and self-fulfilment as a useful and well-adjusted member of the society

On the basis of the objectives, the project team identified English, Mother tongue, Kiswahili' Mathematics, Christian Religious Education, Islamic Religious Education, Agriculture, General Science, Health Education, Art, Craft, Music, Physical Education, History, Civics, Geography and Business Education as the subjects to form the curriculum under the Primary Education Project.

5. Problems Encountered in Primary Education Project

The project faced two major problems in the areas of finance and coordination that eventually led to its being abandoned. On finance, the project had been financed by the World Bank. The finances from the Bank were limited and slow in coming, severely undercutting the work of project implementers.

As far as coordination was concerned, there was an apparent lack of coordination between the project implementers and the Teachers Service Commission. Ideally, the teachers involved in the piloting of the project were not supposed to be transferred from the pilot schools during the life of the pilot phase. However, this was not the case as the Teachers Service Commission transferred the teachers to other schools in the course of the pilot phase. This led to a lack of continuity in the piloting of the materials thus severely stifling the pilot results.

6. The 8:4:4 System of Education

The 8:4:4 system of education came about as a result of the recommendation made by the Presidential Working Party on Establishment of Second University in Kenya (1981), commonly referred to as the Mackay Commission, so named after its chairman. This recommendation was accepted by the government in 1982 and the then Ministries of Basic and Higher Education were asked to start for its implantation in 1985.

The system of education was expected to address the apparent failures of the previous 7:4:2:3 system of education. Specifically, it was expected to lead to an improvement of curriculum content with greater emphasis on technical education with a marked departure from

the previous practice whereby education was heavily examination centred. These were to be done in the context of the following broad guidelines (GoK, 1984):

- **The Challenge of National Development**
The system was expected to address issues of national development, especially the participation of the youth in national development. It was felt that the previous education system did not prepare youth adequately for this task due to its mainly theoretical curriculum.
- **Need for Relevance of the Curriculum**
The curriculum designed under the 8:4:4 system was expected to equip the youth with employable skills and be terminal at each cycle of the educational ladder.
- **Technical and Vocational Training**
The curriculum was expected to emphasize technical and vocational education for the sake of ensuring those graduating from it at any level had scientific and technical knowledge that could be utilized in some form of employment or further training.
- **Assessment and Evaluation**
Unlike in the previous system, which paid little attention to continuous assessment of learners, the 8:4:4 system was expected to lay emphasis on continuous assessment of learners by making it an integral part of gauging students' abilities.

➤ **Primary and Secondary Schools' Objectives and Subjects under the 8:4:4 System of Education**

In order to realize the above broad principles, the government put in place the objectives and range of disciplines summarised in the table below.

	Primary Schools	Secondary Schools
Objectives	i. Acquire literacy, numeracy and manipulative skills ii. Develop self-expression, self-discipline and full utilization of a child's senses iii. Develop ability for logical thought and critical judgment iv. Experience a meaningful course of study which would lead to enjoyment and successful learning and a desire to continue learning v. Acquire a suitable basic foundation for the world of work in the context of economic and manpower needs of the nation vi. Appreciate and respect the dignity of labour vii. Develop desirable social standards and attitudes viii. Grow into a strong and healthy person ix. Develop a constructive and adaptive attitude to life based on moral and religious values and responsibilities to the community and the nation x. Appreciate one's own as well as other people's cultural heritage, develop aesthetic values and make good use of leisure time xi. Grow towards maturity and self-fulfilment as well as useful and well-adjusted members of society	i. Lead to all round mental, social, moral and spiritual development of the learner ii. Prepare the learner to make positive contribution to the development of society iii. Enable the learner to choose with confidence and cope with vocational education after school iv. Build a firm foundation for further education v. Ensure parity in the cognitive, psychomotor and affective skills for all students at this level vi. Lead to the acquisition of attitudes of national patriotism, self-respect, self-reliance, cooperation, adaptability, sense of purpose, integrity and self-discipline, respect and consideration for others, loyalty and service to home, society and nation.
Subjects	1. English, 2. Kiswahili 3. Mother Tongue 4. Mathematics 5. Agriculture 6. Science 7. Home Science 8. Art 9. Craft 10. Music 11. Geography 12. History 13. Civics 14. Christian Religious Education 15. Islamic Religious Education 16. Hindu Religious Education 17. Pastoral Programme 18. Physical Education	1. English 2. Kiswahili 3. German 4. French 5. History and Government 6. Geography 7. Biology 8. Physics 9. Chemistry 10. Physical Science 11. Biological Science 12. Mathematics 13. Music 14. Economics 15. Commerce 16. Typewriting with Office Practice 17. Drawing and Design 18. Electricity 19. Power Mechanics 20. Building Construction 21. Metalwork 22. Woodwork 23. Home Science 24. Christian Religious Education 25. Islamic Religious Education 26. Hindu Religious Education 27. Social Education and Ethics 28. Physical Education

Table 1: Objectives and Curriculum Content for Primary and Secondary Schools under the 8:4:4 Education System

7. Medium of Instruction

At the primary school level, the medium of instruction in upper primary classes (4 – 8) and secondary was to be English while the predominant local language in the school's catchment area was to be used for instruction in lower classes (1-3).

8. Concerns about the 8:4:4 Curriculum

A common complaint about the 8:4:4 system of education has been that the subjects are too many and the scope of content too wide leading to sketchy coverage. In order to cover the curriculum adequately, the learners have been forced to attend schools as early as 6 a.m. and go to bed as late as 11 p.m. notwithstanding studying on Saturdays and during school holidays placing a lot of stress to teachers and learners.

Apart from the wide workload, the other concern has been that although the 8:4:4 system was expected to lay emphasis on the technical and vocational subjects which are basically practical, there has been a problem with the funding of the practical curriculum due to its relative high expense with the teachers largely resorting to theoretical teaching of apparently practical subjects.

The continuous assessment element in the 8:4:4 curriculum has not been effectively incorporated in the summative evaluation of the program. This has been mainly due to lack of a standardized format of continuous assessment tests which, at the moment, are largely left to individual teachers and schools to formulate and administer.

Another challenge is that Kenya is the only country among the East African Countries that follows this structure of education. Tanzania and Uganda still follow the 7:4:2:3 structure. This has posed the challenge in student exchange and placement among the East African Community countries.

9. Conclusion

The educational reform efforts highlighted in this are an effort by Kenya to adjust her education system to factors prevailing in its her history. These efforts have been beset by a number of challenges which may be summarised as financial, procedural, geographical and attitudinal.

10. References

- i. Alala, M.S :Daily Nation, January, 1988
- ii. Ayot, H.O (ed): Contemporary Issues in Education in East Africa, Kenyatta University, 1988
- iii. Bogonko, S.N: An Attempt at Primary School Curriculum Reform in East Africa, 1960-1985,
- iv. Staff Seminar Paper, Department of Educational Foundations, Kenyatta University, 1986
- v. Kariuki, J: The Standard, January, 1981
- vi. Kenya, Republic of: Report of the Presidential Working Party on Education and Manpower Training for Next Decade and Beyond, Government Press, 1988
- vii. Kenya, Republic of: Report of the Presidential Working Party for the Establishment of the Second University in Kenya, Government Printer, 1981
- viii. Kenya, Republic of: Report of the National Committee on Educational Objectives and Policies, Government Printer, 1976
- ix. Sifuna, D.N : Short Essays on Education in Kenya, Kenya Literature Bureau, Nairobi, 1980
- x. Sifuna, D.N : Technical and Vocational Education in Kenya in Kenya Journal of Education, Vol. 1 No.1, 1984