

This work is licensed under a
Creative Commons Attribution-NonCommercial-
NoDerivs 3.0 Licence.

To view a copy of the licence please see:
<http://creativecommons.org/licenses/by-nc-nd/3.0/>

(832)
(a) UNIVERSITY OF NAIROBI
(b) Institute for Development Studies
Discussion papers

AN INVENTORY OF RESEARCH ON EDUCATION
IN KENYA

By

David Court

DISCUSSION PAPER NO. 108

INSTITUTE FOR DEVELOPMENT STUDIES
UNIVERSITY OF NAIROBI
P.O. Box 30197
NAIROBI, KENYA

May 1971

Views expressed in this paper are those of the author. They should not be interpreted as reflecting the views of the Institute for Development Studies or of the University of Nairobi.

This paper has protection under the Copyright Act, Cap. 130 of the Laws of Kenya.

AN INVENTORY OF RESEARCH ON EDUCATION IN KENYA¹

Introduction

This bibliographic essay aims to take stock of research in the social sciences which relates to education in Kenya. Education for this purpose is broadly defined to include all those activities outside the family which are consciously organized to achieve educational or training objectives. The main part of the paper consists of an annotated survey of completed and current research on education. This multi-disciplinary sampling portrays the range of approaches to the study of education in Kenya and is intended to facilitate further enquiry by documenting past contributions. Having catalogued an undifferentiated array of research, the paper attempts to abstract some of the major findings and assess some of the general characteristics of research procedure. This assessment is then used, not to champion particular subjects of enquiry, but to suggest that an urgent necessity is the re-thinking of principles and strategies which might guide such enquiry. Some strategies are proposed for seminar consideration.

A number of broad assumptions permeate the paper. Making them explicit at the outset may assist consideration of the research which is chronicled in the following section. The first is the view that present educational capability in Kenya is subject to severe stress which is likely to become insupportable unless relieved by major structural innovation. As implied almost daily in the newspapers, the main source of this stress is the growing disparity between the present capability of the educational system and the requirements of the society and economy. Until recently, for good historical reasons, these requirements were perceived largely as a deficiency of high level manpower which could be solved by the simple expansion of existing schooling facilities. However the latest Development Plan emphasises the need for adaption of educational practices and structures, and thus registers that increased commitment of policy makers to innovation which poses the challenge to educational research.

A second assumption is that past research, shown in the following section to have been relatively sparse in conclusion and fragmentary in approach, has for the most part contributed little to the solution of Kenya's educational problems. While it is widely agreed that the inherited system of education is inappropriate to the evolving technical needs and social circumstances of independent Kenya, there remains much less certainty over what particular aspects need to be adapted in order to achieve more desirable results. This is precisely because so few empirical relationships have been established between features of educational practice and identifiable social, economic or even educational outcomes.

To question the utility of past research is not to deny the importance of the activity. It is rather to imply a need for thinking through the principles which can best enable future enquiry to contribute to that restructuring of education which is so frequently demanded. For example, it is clear that if restructuring is to be more than change for change's sake it needs to be based on information which is gathered in a way which allows qualitative assessment of the consequences of any educational practice. Thus this paper assumes that the broad objective of research, in relation to educational policy, is to articulate the full range of factors which are likely to impede or facilitate a given educational practice and the full range of consequences of that practice.

By full range we refer to factors both within the instructional setting itself and those which derive from or impinge upon the wider social and economic context of schooling. For example, a change in the content of the selection examination has implications not only for who is selected but also for what is taught in schools, both of which in turn have implications for the economic and social goals of the nation.

Implicit in this view of educational research is the notion that an understanding of educational problems and contribution to their solution comes from a combination of disciplinary approaches. The argument for a multi-disciplinary approach needs little elaboration beyond restating the evident fact that educational problems are many sided and cannot be fully understood within the framework of an isolated academic discipline. Economists armed with the tools of manpower planning and cost benefit analysis have led the way in the application of social science to education in Kenya. However it is increasingly apparent that purely economic criteria are insufficient for assessing the total problems of educational investment and human resource development in Kenya.⁴

The above assumptions are amplified in later discussion. What they add up to is to suggest a task for those concerned, as either producers or consumers, with educational research in Kenya. The task is firstly to consider some fundamental questions about how the educational system is operating in Kenya today and the contribution which existing research makes to understanding and responding to those questions. What are the outstanding characteristics of educational provision in Kenya, its intended functions, its actual consequences and the particular forces which seem to be producing those consequences? Partial answers to some of these questions are contained in ensuing pages. The second and more important part of our task is to give thought to what new kinds of data, methodological approaches, research strategies and organization are needed to enable research to maximize our understanding of educational problems and our contribution to their solution. This part of the task is merely posed by this paper as the challenge before us.

Summary of Selected Research on Education in Kenya

The research which is referenced below is drawn from the disciplines of economics, political science, anthropology, sociology, psychology and professional education itself. Selection was based on a broad definition of education - as any type of organized non-family instructional activity - and of research as any of systematic data collection and analysis. The selection is clearly not exhaustive and some areas are more strongly represented than others. Where possible summaries are drawn from the project description of the researchers themselves or the programme reports of their institutions.⁵ Government and other official statistical compilations are not included. For convenience the references are summarised under various standard headings, which are obviously not mutually exclusive, and within each topic completed research precedes current investigation. The following categories are utilised:- 1) Formal Education, 2) Non-Formal Education, 3) Pre-School Education, 4) Selection and Performance of Students, 5) Attitudes and Values of Students, 6) Teachers, 7) Careers and Employment, 8) Economics of Education, 9) Other Studies, 10) Research Suggestions.

1.

FORMAL EDUCATION

Anderson, J. "The Adolescent and the Rural Community", in J. Sheffield ed., Education, Employment and Rural Development, Nairobi: East African Publishing House, 1967.

This article reports two small scale investigations:

- a). of employment aspirations, expectations, and knowledge of Standard VII pupils in Tetu and Kiambu;
- b). of the whereabouts, aspirations, and backgrounds of a group of primary leavers.

Anderson, J. "The Harambee Schools: The Impact of Self Help", in R. Jolly, ed. Education in Africa: Research and Action, Nairobi: East African Publishing House, 1967.

A useful and thought-provoking review of the experiences of the Harambee secondary school movement, detailing their origins, organization, finance, the type of education being provided and community attitudes towards them.

One of the most salient points revealed by the paper is the extent to which student and community pressures have ensured that the Harambee Schools strive to imitate the traditional, academic, exam oriented approach and structure of the earlier secondary schools.

Brownstein, L. "Preliminary Results of a Survey of 1964 KPE Candidates in Embu, Kitui, Kericho and Nyanza", Institute Staff Paper Number 2, Institute for Development Studies, University of Nairobi, 1966.

For the purpose of gaining information on the magnitude and nature of the primary leaver problem, Brownstein systematically traced the whereabouts, post-exam history, and family background of 1964 KPE candidates from selected schools in four districts. His interview data provide fascinating information on the proportion getting jobs, their method of doing so and the type of job obtained. It includes information about the destination of those who leave home, activities of those who remain home, and type of future training received. The main finding is that the Government's attempt to control secondary school intake according to manpower needs is being circumvented by a) repeating of KPE, b) the establishment of private secondary schools, and c) the founding of Harambee secondary schools. Repeating is a pervasive phenomenon and has the consequence of diverting useful funds, taking up places and creating a pattern of repeating.

Cowan, L.G. The Cost of Learning: The Politics of Primary Education in Kenya, New York: Columbia University Teachers' College Press, 1970.

This book analyses the problems of primary education in their political context of the struggle between the local and central government over control and finance. It traces the administrative history and documents problems of cost, quality, and socioeconomic relevance of primary education, leading up to a detailed appraisal of the Government's goal

of universal primary education. It includes useful teacher and pupil statistics for 1965-67.

Osogo, J.N.B. "The History of Kabaa-Mangu High School and the contribution of the Holy Ghost Fathers Upon Education in Kenya". University of Nairobi, M.A. Thesis, 1970.

Osogo provides a thorough assessment of the contribution of the Holy Ghost Fathers to the education and development of Kenya by means of a detailed history of one of the pioneer institutions of secondary education in Kenya.

Stabler, E. Education Since Uhuru. Middletown, Conn.: Wesleyan University Press, 1969.

This book offers a comprehensive review of Kenya's educational development since independence using a series of profiles of selected institutions which capture the spirit as well as the structure of Kenya's schools. It concludes by reviewing the problems facing Kenyan education and advocates the broadening of the academic base of education as a way of assisting schools to contribute to rural development.

Research in Progress

Herzog, J.D. "Studies of Self Help: 3 Case Study of a Harambee High School." Child Development Research Unit, University of Nairobi.

This research aims to produce a detailed case study of a Harambee school, documenting the two year period from its inception to the present. "An American student teacher has taught and observed in this school. Research staff have attended committee meetings, parents' days and barazas about the school. Each school committee member and other persons involved in the founding of the school and its continuation have been interviewed to secure his or her views on its progress and prospects. Students of the school completed a questionnaire about their socio-economic background and occupational aspirations. An attempt is also being made to discover the students' concept of school. To this end a questionnaire/interview, aimed particularly at the student's academic self-image - his perception of himself as a past and prospective school achiever - is being administered."

Kimilu, D.N. "A Study of Akamba Traditional Education and its Relationship with Formal Primary Schooling." Faculty of Education, University of Nairobi.

Okatcha, F.M. "A Survey of the Educationally Handicapped in Kenya". Faculty of Education, University of Nairobi.

This forthcoming project aims to determine the number and characteristics of the educationally handicapped in Kenya, to review present provisions for their education, and to provide information relevant to the establishment of training programmes for teachers in special education. It will consider children who are blind, deaf, mentally retarded or who suffer from speech defects. It will examine public attitudes towards these disabilities and give attention to ways in which teachers can be made more aware of these problems.

Oxlade, D. "A Study of the English Public School Tradition in the Former Government Secondary Boarding Schools in Kenya and its Influence on other Secondary Schools," Faculty of Education, University of Nairobi.

2.

NON-FORMAL EDUCATION

Anderson, J. "The Village Polytechnic Movement", Institute for Development Studies, University of Nairobi, Special Rural Development Programme Evaluation Report, Number 1, August, 1970.

This paper summarizes and evaluates the origins, experiences, current practices, principles and administrative structure of village polytechnics in Kenya. It includes comprehensive recommendations for research and reform. The report suggests that a critical stage has been reached in polytechnic development with an urgent need for diversified support, greater understanding of the priorities of rural peoples, and of the scope and nature of employment opportunities in rural areas to make possible clearer specification of polytechnic goals. Its main research recommendations are for a survey of present employment patterns in rural Kenya and employment conditions and potential in each region in Kenya.

Fordham, P. and Sheffield, J.R. "Continuing Education for Youth and Adults" in J. Sheffield, ed. Education, Employment and Rural Development. Nairobi: East African Publishing House, 1967.

This paper documents the magnitude of the primary leaver problem and contrasts it with the range and capacity of the present educational opportunities available for those who do not go to secondary school or into wage employment. Present facilities for non-academic education include artisan training in trade schools, apprentice schemes, National Youth Service, Youth Centres, correspondence courses, private schools and 4K clubs. Concluding that the variety of training facilities for the bulk of primary school leavers is woefully inadequate and uncoordinated, the authors suggest the need for a national youth strategy to be directed by a central government body. The objective of this organization would be to divert the drive to academic education by providing and coordinating alternative facilities and in particular absorbing the bulk of primary leavers in village polytechnics or multipurpose training centres.

Kinyanjui, P.E. "An Analysis of the 1968 K.J.S.E. Results for CCU Candidates", Institute of Adult Studies, University of Nairobi, Mimeo, 1969.

This study reports analysis of the performance of Correspondence Course Unit candidates in the 1968 Kenya Junior Secondary Examination. The principal findings are: a) that candidates scored better results in the subjects for which the CCU had provided lessons than in subjects not offered by the CCU; b) the average percentage pass for CCU candidates was slightly higher than that for school candidates but considerably higher

than that for private candidates; c) the higher pass rates are attributed to the systematic form of study encouraged by the CCU.

Kinyanjui, P.E. "A Survey of Learning and Study Methods Used by Students Enrolling in Radio/Correspondence Courses in Kenya, 1968", Institute of Adult Studies, University of Nairobi, Mimeo, 1969.

Results are reported from a questionnaire sent to 680 Correspondence Course Unit students to investigate their background, study habits and responses to different radio/correspondence courses. The bulk of students turn out to be teachers, between 21 and 30 years old, who are married with more than four dependents, have had full primary schooling, have been away from formal schooling for several years and aspire to take the School Certificate examination. The typical student has no electricity in his home, owns virtually no books, has no regular access to a library, does not buy newspapers regularly, but does own a radio which is his principal source of news.

Kinyanjui, P.E., "Certificate of Adult Studies by Correspondence"; Institute of Adult Studies, University of Nairobi, Mimeo, 1969.

This paper provides data on the educational background and study interests of 1,100 P1 and P2 teachers, obtained from a mailed questionnaire designed to aid the planning of correspondence courses.

Kuboka, D.J.N. "How Far Has The Adult Education Scheme Achieved Its Purpose in the Municipal Area of Mombasa". Unpublished dissertation, Department of Political Science, University of Dar es Salaam, 1971.

Having outlined the ostensible purposes of adult education in Kenya, the paper describes the organization and views the achievements of adult education in Mombasa. It concludes with suggestions for reform.

Moore, M.G. "Survey of the Broad Field of Fundamental Education in the Coast Province with Special Reference to the Improvement of Rural Extension in Kwale District". Institute of Adult Studies, University of Nairobi, 1969.

A case study, based on interviews and documentary sources, describes the provision of fundamental (adult literacy) education in Kwale District. The study details the institutions involved, their organization, methods and coordination. It recommends ways of achieving more effective rural adult education.

Mulwa, T. "Survey of Formal Adult Education Provision in Kenya, 1969", Institute of Adult Studies, University of Nairobi, 1969.

This study is based on information obtained from a detailed questionnaire sent to all known adult educators and interviews with selected individuals. It provides a comprehensive picture of the existing facilities for adult education and includes details on its structure and organization, curriculum,

background data on students and teachers and a summary of financial provisions. It concludes with a series of recommendations for improving the provision of adult education.

Prosser, R.C. "The African Adult Student" in Edstrom, L.O., Erdos, R., and Prosser, R. eds., Mass Education: Studies in Adult Education and Teaching by Correspondence in some Developing Countries, New York: African Publishing Corporation, 1970.

Research in Progress

Anderson, J.E., Court, D., Mai, W. "Village Polytechnics: Rural Employment and Changing Conceptions of Education", Institute for Development Studies, University of Nairobi, and National Christian Council of Kenya.

This projected study is intended to provide systematic data documenting the linkages between village polytechnics and their social and economic contexts. Data of three broad types will be collected. Firstly present employment patterns of samples of rural youth will be surveyed. Secondly an attempt will be made to detail the categories of potential employment in a number of defined areas containing village polytechnics; a pilot investigation is currently in progress. A third complementary investigation will collect data on background, performance, employment and educational outlook of village polytechnic students.

Okatch, J.N. "The Sociology of Adult Education - a socio-economic study on the approach to adult education amongst the Luo people in South Nyanza", dissertation in progress, Faculty of Education, University of Nairobi.

"The thesis aims to discover what problems confront adult educators in their attempt to implement educational programmes in an adult Luo society, bearing in mind the historical, cultural, environmental and economic factors obtaining in that society ... It will also try to indicate what areas of adult education should be given priority, taking into account what quick tangible results such priorities may have in the society. Finally the thesis will suggest approaches to adult education of some general applicability to a rural African society".

Sheffield, J.R. "Adult Education and Community Development Projects in the Transformation of Traditional Agriculture", Teachers College, Columbia, New York.

Kenya is included among eleven African countries in which a series of case studies of informal educational enterprises will be carried out during the second half of 1971.

Thomas, D. "The Financing of Adult Education in Kenya", Institute of Adult Studies, University of Nairobi.

By means of interviews with appropriate officials and review of relevant documentation this study aims to fulfil the following objectives:-

- (1) To identify the major institutions providing educational opportunities for adults and to indicate the financial implications of their annual provision.
- (2) To provide a comparative basis for study of the finance for different adult "student" groups, i.e. illiterate farmers, examination-oriented adult students.
- (3) To indicate the relative costs of residential forms of adult education as against non-residential forms.
- (4) To identify sources of income for adult education.
- (5) To give some indication of the scale of past financial provision as a measure of its growth.
- (6) To describe and assess the importance of adult student fee-payment.
- (7) To indicate the major problems involving finance which face providing bodies and to recommend, where appropriate, possible solutions to these problems.
- (8) To attempt to determine the approximate expenditure per head on the education of the overall adult population as a first bench mark figure of measurement.

3.

PRE SCHOOL EDUCATION

Cohn, A. and Mwaniki, J.I. "The Behaviour of Children in Nursery School", Child Development Research Unit, University of Nairobi, Mimeo, 1969.

The problem of concern in this study was the effect of economic and cultural backgrounds on a child's ability to profit from his initial school experience. A code for analysing classroom behaviour, devised at Harvard, was used in a nursery school in periurban Nairobi. Twenty nursery school children - 10 boys and 10 girls - were observed, each for six ten-minute periods, and the frequency of 29 types of behaviour recorded. The teachers were interviewed as to the age, sex and residence of these children. Although the sample was so small that comparison could not be made controlling for these variables, some of the findings were substantial enough and similar enough to research reported for the United States to warrant further study. Of particular interest is the finding that girls become more involved in the classroom procedures and both participate in and enjoy more the activities prescribed by the teacher than do boys. Boys, on the other hand, interact more with each other, often when it is inappropriate in the school context. Children who grow up in the centre of town where the houses are crowded and the play groups are large, tend to spend more time in school interacting with other children, again often to the

neglect of school routine, than do children who grow up in homesteads surrounded by garden and pastures. The homestead children enjoy and participate more in the school program than their town-mates. This is also true of children of polygynous families who not only cooperate and participate in and enjoy the school program more but also behave in such a way as to indicate greater desire to cooperate and please the teacher. However since polygynous children tend to live in homesteads it remains for future research to determine whether type of family or residence is the more important variable."

Herzog, J.D. "A Preliminary Survey of the Parents of Nursery Centre Children in Four Communities in Kenya". Child Development Research Unit, University of Nairobi, 1969.

The aim of this project was to investigate motives for the establishment of nursery schools in Kenya and to gain information on the curriculum and teaching methods prevailing in them. "Approximately 80 mothers of nursery school children from four areas (3 in Nairobi proper and 1 in periurban Nairobi) were interviewed concerning their reasons for sending their children to a nursery and the means they employ for evaluating the experience obtained by the children in the school. These attitude questions were supplemented by inquiries into the socio-economic status of the household. The four samples were chosen largely on the basis of accessibility, and not according to formal criteria of representativeness. Three major conclusions emerge from the study:-

- a) Regardless of socio-economic background, almost unanimously, parents look to the nursery schools for academic preparation for the early primary standards. Social and emotional 'growth', while seen as desirable, is a distinctly secondary interest.
- b) The typical nursery school child in Kenya is five, six, or seven years old, perhaps older; curricula and methods appropriate to three and four year olds in other countries are probably inappropriate to these youngsters.
- c) Especially in the cities, parents look to the nurseries to protect their children from the corrupting influence of the urban environment. As the cities grow, so will pressures from parents for more nursery 'havens'.

4.

SELECTION AND PERFORMANCE OF STUDENTS

Kenya Institute of Education, 'Safari Book 3 (Std. VI), 1970.

"In conjunction with the Foreign Languages Education Section of K.I.E. a project to compare the performance of pupils who had studied the Safari course with performances of pupils who had studied other English courses at the same level was carried out among pupils of fifteen different urban and rural schools. Experimental classes adhered to the Safari course material, control classes adhered to Straight for English or other course material. One test was designed to evaluate how efficiently pupils had learned Safari course material, and another test was designed to compare how efficiently the Safari course taught items judged to also be

relevant to Straight for English. Tests were administered at the beginning of the second term (April, 1970) and again at the end of the third term (Nov., 1970). Four scores were therefore obtained from each of over 1,000 Standard VI pupils.

"All test items were analysed for effectiveness of distractors, difficulty and discrimination levels. Poor items were discarded leaving 28 items in the Safari test and 27 items in the common-item test. The significance of the difference between the means and also the significance of the difference between the amount of improvement were computed."

"The results in many cases showed higher scores and greater improvement for Safari pupils over pupils of other courses. In no case was an experimental Safari class lower than its control class."

Kenya Institute of Education, "Thirty-Item-Single-Word Reading Test", 1970.

"In cooperation with the Foreign Language Education Section of K.I.E. a test of single-word reading skill was constructed. Composed of a list of thirty single words (ten from the beginning of the Standard II Link Reader, ten from the same reader's later pages, and ten assumed to be "new" to the pupils) the purpose of the test was to assess the general state of single-word reading-ability of Standard II pupils in Nairobi City Council Schools and to determine if new word attack skills might be present from exposure to phonics training. In June 1970, 743 Standard II Nairobi City Council School pupils were tested.

"Results indicated considerable variation in scores on the first twenty words, but that the last ten new words were read incorrectly by 568 of the 743 pupils. It was concluded that the first twenty words may be useful as a test of Standard II pupils single-word reading ability, but that the last ten were probably useless except for their having demonstrated an almost complete lack of new-word attack skills among pupils tested.

"An extension of this study was carried out to determine if pupils who could not read the new words were different in their comprehension ability from pupils who could read the new words. 17 pupils were selected who had most of the first 20 words correct but none of the last ten; 18 other pupils who had virtually all of the 30 words correct were compared with the first group on their performance on a ten item reading comprehension test. From the higher results obtained by the second group it was concluded that pupils who had developed new-word-attack skills were better able to comprehend sentences than those who had not, thus supporting the inclusion of instruction in new-word-attack skills in Standard I."

Munroe, R.H. and Munroe, R.L.: "Reading Pictures: A Cross-Cultural Perspective", Child Development Research Unit, University of Nairobi, 1969.

The ubiquitous use of pictures as symbols for words and numbers in school text books assumes that the message of the pictures is self evident to the child entering school. In order to probe this assumption a series of pre-tested pictures implying three dimensionality were shown to 24 children ranging in age from 7-13 in the Logoli panel community. Thirty five per cent gave three dimensional responses and in this percentage boys were more heavily represented than girls. The suggested conclusion is that perception of three dimensionality and the understanding of

distance, as denoted by relative size, are two aspects of the language of pictures which require learning and explicit instruction.

Rado, R., Morgan, J., and Shepard, D. "The Selection of Form Four Leavers for Further Education, Training, and Employment." Institute for Development Studies, University of Nairobi; Discussion Paper 92, 1971.

This report describes present selection methods for Form IV and puts forward criteria and suggestions for more effective selection and placement in terms of both efficient use of scarce talent and equity.

Ryan, T.C.I. and Stewart, F. "School Background as a Predictor of First Year Economics Performance." Institute for Development Studies, University of Nairobi, Staff Paper No. 77, 1970.

This paper attempts to explain performance in the University of Nairobi economics examination by reference to students' secondary school background, general ability, mathematics ability, and experience of economics. The results show that measures of general ability (A and O level) and experience of economics are the best predictors of university exam results.

Research in Progress

Kenya Institute of Education, "School Readiness Test".

"A December 1970 Research Workshop with Education Tutors from about 25 Kenya Teachers Colleges resulted in their selecting to carry out with the Research Department a project to establish a standardised test of school readiness for pre-schoolers. The test, the Kenya Primary Picture Games, required children to select pictures that were similar to or different from other pictures or that corresponded to directions read in the child's vernacular by the test administrator. As of May 28, 1971, results from 2311 Standard 1 pupils have been received at K.I.E. Most games were administered by approximately 700 student teachers some time between Jan. 15 and 28, 1971. Data from the students' responses and from approximately twenty independent variables per child are being prepared for analysis by computer.

"Item analysis will be carried out initially which will include a record of pupils' responses to each alternative and a test of significant difference between these; difficulty levels; top and bottom 27% discrimination indices; and a point-biserial correlation of each item with the total test score. Poor items will be discarded. Analysis of remaining items may provide interesting results and will be the basis for a second revised Games."

Kenya Institute of Education, "Modern Mathematics".

"In conjunction with the Primary Maths Section of K.I.E. a project to provide a pool of reliable modern mathematics question types for the 1971 C.P.E. examination was undertaken. A test of 50 items was administered at the end of March 1970 to 1700 Nairobi City Council and Kiambu school pupils who had been studying the Standard VII Entebbe Mathematics Series."

"A random selection of 200 of the papers underwent item analysis including subjective evaluation of content areas represented, reasoning or cognitive skills tested and item format; and an objective analysis

of pupil responses to each alternative, difficulty levels and top and bottom 27% discrimination indices. It was found that content areas were generally well represented, higher reasoning skills were not well tested, many item wordings and formats needed revision to correspond with the objectives of Modern Maths Programmes, over 50% of the items were too difficult and almost half of the items did not effectively separate bright pupils from weaker pupils.

The analysis of these items is now being used to construct a revised test."

Landauer, T., "A Transcultural Test of Memory", Child Development Research Unit, University of Nairobi.

"This study is an attempt to validate a test designed to measure the ability for rote memory, an important component of intelligence, in a way that controls for cultural differences. The test consists of 60 cards showing drawings of a boy and a girl from 30 different cultures distributed over the world. The drawings were made from photographs and represent the clothing, facial expression and skin colour appropriate to each culture. Assuming these 30 cultures to be representative of the cultures of the world, a child from any culture should find in the set an approximately equal number of familiar and unfamiliar costumes and physiognomies. The task is to remember the names assigned arbitrarily to each of the 30 boys and 30 girls pictured. To make the test transculturally equivalent, the thirty most common first names for boys and for girls in the given culture are used. These are selected from census data and school records. The experimenter goes through thirty of the sixty cards naming each boy and girl. The subject is then asked to recall the names when the pictures are shown to him again. Two days later the child is retested. The test has been given to a sample of children from six panel communities. School records and C.P.E. scores have been obtained on these children whenever possible to provide validation measures".

Leiderman, G. "Cognitive Development and Mathematics Learning", Child Development Research Unit, University of Nairobi.

"Readiness for progress through school is assumed to be related both to biological development antecedents and to the pre-school experiences of the child in interaction with his environment. The purpose of this study is to test groups of five and seven year old children from three panel communities representing differing degrees of modernization to assess cognitive development and knowledge hypothesized to be related to the learning of abstract ideas, with particular emphasis on mathematical ideas. The test being used is an individually administered instrument translated from the version used in the United States and adapted so that materials are appropriate to the experiences of the children in the Kenyan samples. The independent variables to which the children's performance at the beginning and end of the school year will be related are attendance at school, urban-rural residence, father's presence in the home, economic index of the family's resources including material objects in the home, mother's interaction with the child, and observation of classroom activities."

Logan, R. "Child-Rearing Practices of Mothers of High Achieving Children in various Kenyan Communities", Child Development Research Unit, University of Nairobi.

This project aims "to ascertain whether Kenyan children who are highly successful in school have been reared in ways significantly different from other less successful children. The study will use interviews with mothers in order to obtain information on their child rearing practices, attitudes, and beliefs. Information on children's school success will consist of the KPE results and rank in class. A subsidiary study will be conducted in which university students will be interviewed as to their parents' child rearing, and results will be compared with a matched sample of non-university young people in order to determine whether there are significant differences."

Logan, R., Whiting, B., Geteria, J., Wamai, M.. "The Influence of Children's Environments on their Ability to Pay Attention in School," Child Development Research Unit, University of Nairobi.

This project is interested in determining "whether the degree of crowdedness of a child's near-home environment bears any relation to his distractability in the classroom. Two judges who do not know the backgrounds of the children in question, will observe children in a classroom situation and will rate them independently on a number of measures of attention to task and to teacher. It is hypothesized that children from more crowded settings will be more distractable and less well able to pay attention than children from less crowded settings."

Logan, R., Gaitirira, L., Geteria, J. and Kagia, R.. "Some Measures of Cognitive Development in Peri-Urban Kenyan Children", Child Development Research Unit, University of Nairobi.

This project aims to determine whether the level of cognitive development in children is related to the extent to which the setting they grow up in is "traditional" as opposed to more "modernized". Using Kohlberg Moral Judgement Stories and Piaget Dream Interviews, measures of the degree of differentiatedness of children's thinking will be obtained for children living in settings that vary along a dimension of "traditionalism-modernism".

Malache, A. "The Education of Women in Kenya", Faculty of Education, University of Nairobi.

A study is in preparation which will use a series of cross sectional samples to investigate factors associated with the education of women in Kenya and relationships between education and female occupation and status. The study will build on previous work of the author in Uganda.

Sieley, S. et al. "Who Goes to School: Ability or Birth?", Child Development Research Unit, University of Nairobi.

The main aim of this project is "to determine to what extent family size, sex, birth order, parental occupation and parental education influence a child's chances of going to school in Kenya. Using data from the CDRU Basic Data Files (which include demographic, family history, and various other background information) the study will examine the relationship of the above factors to school-going in a cross-section of Kenyan communities."

Somerset, H.C.A. "Development of Aptitude Tests Suitable for Use in East Africa", Institute for Development Studies, University of Nairobi.

"It is the aim of the project to help overcome the difficulty of selection at the various levels of the educational system in Kenya, by the development of aptitude tests suitable for local conditions. The project arises out of preliminary work carried out in Uganda in which a short battery of aptitude and achievement tests was developed. Two tests proved especially useful, the first being a verbal reasoning (analogies) test, using only words familiar to pupils in their seventh year of education. The items are constructed to reduce as far as possible the handicap of pupils living in remote or less educationally developed parts of the country. The second test measures knowledge of English vocabulary and serves as a check on the effects of school quality on performance in the measuring test. Both tests have already been developed through three revisions and a further two revisions will probably be necessary before the tests reach acceptable levels of reliability. Item analyses are being carried out using the new University computer installation and a validity study is planned to follow."

Somerset, H.C.A., Shepard, D.S. and Crockett, D. "Post-Secondary School Selection Procedures". Institute for Development Studies, University of Nairobi.

"Procedures for more efficient and equitable selection of school leavers for post-secondary training and employment are being investigated, along with possibilities for a punch-card system to facilitate clerical work."

5. ATTITUDES AND VALUES OF STUDENTS

- Kandall, M.N. "Kenyan Students in Great Britain and Ireland," University of London Research Unit for Student Problems, London: November 1970.
- This study reports general descriptive findings of a questionnaire survey of background, field of study and expectations of Kenya students studying in Britain.
- Kenya Institute of Education, "Combined Research Project, 1970 - Pupils, Parents' and Teachers' Expectations for Education".
- This paper presents findings from an interview survey designed to compare expectations toward education of samples of pupils (497), teachers (451), and parents (251). Interesting differences between the three groups were found, with pupils tending to view education as a means to job opportunities, parents seeing it in terms of family welfare, and teachers emphasizing its contribution to national welfare. The effect of various background factors on expectations is analysed and the paper provides a useful description of procedural difficulties encountered during the study.
- Koff, D., and Von der Muhll, G. "Political Socialization in East Africa", The Journal of Modern African Studies, Vol. 5: No. 1, 1967, pp. 1-53.
- This article presents findings on political attitudes of Tanzanian and Kenyan primary and secondary students using a sub-sample drawn from the larger East African Education and Citizenship Project data. Assuming that schools are the principle means of socialization of their students, the paper describes the salient attitudes of respondents and attempts to evaluate the socializing effects of schools in relation to

national goals. The principal findings are: a) Qualities of citizenship are perceived as comprehensive sets of virtues including such items as hard work and cooperation; b) Schools are perceived as the appropriate place for civic learning; c) Students display relatively low degrees of trust for their fellows and attach little importance to the preservation of local traditions; d) There is striking similarity between the attitude of Kenyan and Tanzanian students at each level while marked differences separate primary and secondary students at each level.

Koplin, R.E., "Education and National Integration in Ghana and Kenya", Department of Political Science, Unpublished dissertation, University of Oregon, 1968.

This study compares the effect of education upon attitudes that relate to national integration using a cross sectional sample of secondary and university students from Kenya and Ghana. The findings reveal a) consistent cross national differences and b) that education tends to be malintegrative, the status differential of education reinforcing the cultural, linguistic and historical bases of cleavage. (Data from the Kenya section of the study is summarised in Koplin, "Kenya Students" in Hanna, W. and Lipset, S.M. African University Students and Politics, Basic Books, forthcoming.)

Okatcha, F.M. "Changing Attitudes, Beliefs, and Opinions Among First Year B.A. (Education) Students", Confidential Report, Faculty of Education, University of Nairobi, 1971.

Okatcha, F.M. "Changing Attitudes, Beliefs, and Opinions Among Luhya Secondary School Pupils", Confidential Report, Faculty of Education, University of Nairobi, 1970.

Repashy, A.J., "The Reaction of Kenyan Returnees to their Educational Experiences Abroad". University of California, Los Angeles, unpublished dissertation 1966.

6. TEACHERS

Indire, F.F. "Motives Inspiring Would-be Secondary School Teachers in Kenya", Mimeographed Paper, University of Nairobi, Faculty of Education, 1969.

This paper tabulates the stated reasons why second year students at a secondary teacher education college want to become teachers, and discusses the policy implications of their motives.

Maathuis, J. B., "To Teach or Not to Teach Family Planning in Kenyan Primary Schools", East African Medical Journal, Vol. 47, No. 11, Nairobi, November, 1970.

Results are presented from an inquiry made among 212 headmasters of primary schools in South Nyanza District, Kenya, regarding their ability and willingness to teach human reproduction and family planning. Three conclusions are drawn from the data: 1. The headmasters questioned do not have sufficient knowledge of the subject; 2. The teachers questioned are not familiar with the economic and demographic arguments in favour of a family planning programme; 3. The teachers are aware of the economic strain of having too many

children, and the fact that their pupils seem to start sexual relations fairly early. On the basis of the survey the Ministry of Education was recommended to consider including family planning in the curriculum of the primary schools and to provide the appropriate teaching aids.

Research in Progress

Catlett, R.W. "Teachers and National Integration", Department of Political Science, University of Nairobi.

The aim of this study is to identify factors explaining the role of teachers in the process of political integration. Aspects of integration which are investigated are the linkages between teachers and government, the cohesion of different classes of teachers and of their national organization, relationships between the teacher and his society and between mobility and national goals. Questionnaires have been developed for administration to 750 primary and secondary teachers and teacher trainers in eight districts and Nairobi. In addition a systematic survey is being undertaken of Kenya National Union of Teachers' leadership (N, 100) and of the development of branch organizations.

Maleche, A. "Teacher Motivation and Teacher Wastage", Faculty of Education, University of Nairobi.

The specific objective of this study is to investigate factors accounting for the high turn-over rate among Kenya teachers. The more general objective is to derive generalizations regarding mobility among Kenya professionals from an investigation of the case of trained teachers. Using a mail questionnaire and follow up interviews the study will investigate the motives, background and role perceptions of a sample of prospective teachers in training and will secondly trace a sample of those who have received teacher training to their present occupation.

Peacock, M. "A Study of the Needs of the Special Role of the Primary School Teacher in Kenya", Faculty of Education, University of Nairobi.

7.

CAREERS AND EMPLOYMENT

Kinyanjui, P.K. and Somerset, H.C.A. "Secondary School and University Leavers Tracer Project and the Labour Market", Institute for Development Studies, University of Nairobi.

There has long been a gap between surveys of job aspirations among impending school leavers and the work of the manpower forecaster. This project is attempting to provide a link by revealing how secondary school and university leavers are absorbed by the labour market. It also is attempting to explain how career preferences are formed and to estimate the extent to which they are satisfied. The project is intended to test the feasibility of establishing regular tracing exercises within the schools for improved career guidance and curriculum development. Research has therefore been carried out in close cooperation with careers masters in secondary schools and with the office of the Dean of Students at the University of Nairobi. The survey consisted of two parts. In the first, samples of secondary school Form Four leavers of the years 1965-69 and of University leavers of 1966-69 were traced to their present whereabouts and information

obtained on the employment and training history between leaving school and the present day. In the second part a detailed questionnaire was administered to a representative sample of 1969 Fourth and Sixth Form leavers and to all Kenyans graduating from the University of Nairobi in 1970. The Questionnaire was designed to discover students' educational and career preferences and expectations and to test their knowledge of the labour market. It also collected detailed information about family background. Preliminary findings from the project have been reported in a number of papers.

1. Kinyanjui, P. "The Education, Training, and Employment of Kenya Secondary School Leavers", Paper presented to the Kenya Secondary School Heads Association Careers Conference, Nairobi: May 3-5, 1971.

The paper is concerned with the allocation of secondary school leavers to a labour market in which supply is outstripping demand at an accelerating rate. It provides a picture of what happens to secondary leavers gained by tracing a random national sample of 3000 Form IV leavers between 1965-68. Data is presented on the proportion of Form IV leavers who go to higher education, different types of training, direct employment, and into the ranks of the unemployed, and analysis examines the relationship of the EASC performance to student destination. The main findings are a). A very strong relationship is found between EASC performance and what happens to school leavers; b). the labour market is becoming increasingly selective in terms of EASC performance; c). the public sector plays a dominant role in providing employment; d). unemployment in the first year after leaving Form IV ran at 14% and dropped to 9% in the second year.

2. Rastad, S.E. "Employment Categories of Kenya Graduates of the University of East Africa", Institute for Development Studies, Institute Staff Paper Number 73, University of Nairobi, 1970.

This report gives initial descriptive tables and information about the present occupation and family background of all past Kenyan students of the University of East Africa. One of the most interesting conclusions is the ease with which 90% tracing could be accomplished.

3. Rastad, S.E. "University Students and the Employment Market - A Profile of present Graduates of University College, Nairobi", Institute for Development Studies, Institute Staff Paper Number 74, University of Nairobi, 1970.

This paper reports basic descriptive findings from an interview schedule administered to all Kenyan third year students at the University of Nairobi. The main aims of the study were to discover how students approach the employment market and reasons for their choice of courses of study.

4. Somerset, H.C.A. "Educational Aspirations of Fourth Form Pupils in Kenya", Paper read at Universities of East Africa Social Science Conference, Dar es Salaam, Tanzania, Dec. 27-31, 1970.

This paper traces the interactive effects of school quality and individual achievement on educational and occupational aspirations of 1253 Form 4 students from 24 secondary schools. The results of the study show the following overall trends: a). most students have a realistic perception

of their educational prospects, b) there is a strong relationship between educational achievement and educational aspiration. The most significant finding is that school quality is an important intervening variable. For a substantial minority whose achievement is a poor predictor of their aspirations, the effect of achievement depends upon the type of school attended (local, Harambee, national).

Koff, D., "Education and Employment: Perspectives of Kenya Primary Pupils," in Sheffield, J. ed., Education, Employment, and Rural Development Nairobi: East African Publishing House, 1967, pp. 340-412.

Using samples from the East African Education and Citizenship Project, Koff investigates salient attitudes of 507 Standard VII pupils from rural school and 164 from urban schools. He documents the perceived purposes of education, occupational preferences, values and aspirations and looks at the effect on these perspectives of family background and home location. The major findings are a) education is seen largely as a means to occupational and social mobility; b) clerical positions are preferred to farming; c) however, the economic importance of farming is recognized; d) pupils are unrealistically optimistic about their chance of gaining a place in a secondary school; e), family background and area of residence have a significant impact on particular occupational values and expectations.

Marris, P. and Somerset, H.C.A. "African Businessmen: A Study of Entrepreneurship and Development in Kenya" London: Routledge and Kegan Paul, 1971.

Chapter 9 of this investigation into factors associated with the generation and achievements of Kenya business looks at the connections between education and business enterprise. The data reveal no consistent or linear relationship between business achievement and education or occupational training. The relationship between general education and vocational training to success depends upon the stage of development of the business. At a simple stage of its organization, basic education is related to profitability, but when markets expand and the organization becomes more complex, specialized training and experience replace education as the crucial factor.

Research in Progress

Raju, B. "A Structural Analysis of Career Choices of Form IV Students in 1969, in relation to the skilled manpower requirements, and the educational and vocational opportunities available in Kenya", Faculty of Education, University of Nairobi.

This study is investigating the career preferences of about 3,000 Form IV students who appeared for School Certificate examinations in 1969 at 36 Kenyan secondary schools. The sample is divided between about 2000 boys and 1000 girls. Concurrent with this study is an investigation of national manpower requirements and available educational and vocational opportunities. Analysis will examine the correlation between career choices, available job opportunities and manpower requirements.

8. ECONOMICS OF EDUCATION AND EDUCATIONAL PLANNING

Jolly, R. Planning Education for African Development, Nairobi, East African Publishing House, 1969.

This study draws on data from a number of African education systems to illustrate a series of instructive propositions about the planning of education in Africa. Their subject matter is indicated by the study's chapter headings:- Profiles of educational attainment in Africa; Manpower flows in the school systems of developing countries; A case study of educational expansion in Uganda; Limitations on the rapid expansion of education; Optimising strategies for educational expansion; and An outline of economic issues for long run educational planning. Its main conclusions are: a). The real resources required for educational expansion are human resources - manpower of various educational levels, not finance or even capital; b). Unit costs of education can be considerably reduced with negligible effects on the quality of the education provided; c). There is an urgent need to integrate educational planning with all other aspects of national planning over a long term period; d). There is a need to fix educational targets in terms of age-educational profiles for the whole population at different dates in the future rather than the present school centered method of enrolment ratios for particular age groups.

Jolly, A.R. and Rado, E. "Projecting the Demand for Educated Manpower: A Case Study" in M. Blaug ed., The Economics of Education: 2, Penguin Modern Economics, Penguin Books, 1969.

The article presents a positive evaluation of the need for and possibility of making medium and long run projections of skilled manpower requirements as a guide in preparing plans for educational expansion. The two most important conclusions are: a) That ignoring important sectoral differences the quantity of skilled manpower demanded will increase at about the same rate as real output in the whole economy. The evidence for this relationship is based on a regression study of output per head and stocks of educated manpower in some 24 developed and less developed countries; b). The rate of educational expansion required to achieve balance with manpower requirements at some future target date will thus depend on the projected rate of economic growth until that date and the proportion of skilled and educated posts to be localised at that date (in relation to the present level of localisation). The method is illustrated with data for East Africa, which also show the tremendous importance of reducing educational costs if the forecasted educational needs are to be met.

Rogers, D.C. "The Returns to Investment in Higher Levels of Education in Kenya", Institute for Development Studies, University of Nairobi, Discussion Paper No. 59, 1966.

This paper investigates the feasibility of students paying back costs of their university education by means of a loan programme. It compares current returns to different levels of education and projected returns if repayment were put into operation. It concludes that a loan programme with re-payment over life is economically feasible without being a heavy burden on students and would have important welfare implications.

Thias, H. and Carnoy, M. Cost Benefit Analysis in Education: A Case Study, Washington, D.C.: International Bank for Reconstruction and Development, Report No. EC 173, November, 1969.

This study is based on interview data from 4762 employed Kenyans. It applies Blaug's cost benefit approach to educational investment for the purpose of deriving information valuable for the assessment and planning of the education system. In particular it provides information indicating: a) private and social returns to investment in education adjusted for differences in SES and other factors, b) rates of return for increasing different kinds of per pupil expenditure and c) likely future trends in the supply and demand of educated manpower. The study includes a wealth of basic data relating to the education system and the occupation and wage structure. It concludes among other things that both private and public investment in education show disproportionately small returns in immediate economic benefits. It calls for research to measure the non-economic effects of primary education, the reasons why parents continue to send their children to school, and ways in which the structure, curriculum technology and objectives of the education system can be made to relate to the economic system.

Research in Progress

Fields, G.S., "Aspects of the Economics of Education and Labour Markets in Kenya", Institute for Development Studies, University of Nairobi.

The aim of the project is to consider selected aspects of the economics of education in Kenya with particular reference to labour market conditions. The project consists of five parts:-

- a) A description of the facts of the educational system in Kenya,
- b) Consideration of the types of private and social costs and benefits of education in labour surplus economies,
- c) Estimates of rates of return to - different levels of education in Kenya,
- d) An empirical analysis of equity in the financing of different types of education in Kenya,
- e) A theoretical model of demand for education in labour surplus economies.

Two interim reports on this project are available:-

G.S.
Fields, "The Educational System of Kenya: An Economists View", Discussion Paper Number 103, Institute for Development Studies, University of Nairobi, 1971.

This paper presents a concentrated array of basic economic facts pertaining to Kenya's educational system. It includes data on each type of education, their administration, financing, enrollments, teacher qualifications, employment prospects for their products, etc.

Fields, G.S., "Private and Social Returns to Education in Labour Surplus Economies", Discussion Paper Number 104, Institute for Development Studies, Universities of Nairobi, 1971.

This paper considers the case, with reference to Kenya, for treating the social rate of return as the proper criterion for the allocation of public funds to education.

Hopcraft, P.N. "Human Resources and Technical Skills in Agricultural Development. An Economic Evaluation of Educative Investments in Kenya's Small Farm Sector," Institute for Development Studies, University of Nairobi.

"This study involves the use of detailed economic data accumulated in monthly visits from a selection of 1,700 small farms widely dispersed throughout Kenya. Additional data has been gathered on the human resource characteristics and sources of information of the farm decision makers, and the study now focuses on the extent to which these characteristics (schooling, training, contact with extension services, farm and non farm experience, etc.) explain the differences in farm performance and the economic mechanisms by which these differences result. The statistical findings will be supplemented with case studies. It is hoped that from the analysis will come some notion of the productivity of the various training and educative investments that are being made in the rural sector, and that the study will contribute towards a better understanding of the role of knowledge and human resource factors in agricultural development."

Mtua, R.W. "Development of Educational Administration in Kenya", Faculty of Education, University of Nairobi.

9.

MISCELLANEOUS

Indire, F.F. "The Contribution of Traditional Education to Modern Schooling", Faculty of Education, University of Nairobi, 1970.

This study is attempting to record beliefs and practices in traditional education which are common to different tribes and which might contribute to improved teacher training.

Olson, J.B. "Secondary Schools and Elites in Kenya: A Comparative Study of Students in 1961 and 1968". Paper prepared for the University of Chicago Meetings of the Comparative and International Education Society.

This study is based on a comparison of 1961 and 1968 questionnaire responses from national samples of secondary students. It focuses on processes of social selection and examines the extent to which the expansion of secondary education has affected tribal and socio-economic equality of opportunity. Analysis reveals that the Kenyan education system remains remarkably egalitarian despite slight over-representation of two tribes and under-representation of those with unschooled fathers. However the privileged background of students attending the high cost schools poses the possibility of elite stratification in the future.

Anderson, C.A., Bowman M.J., Olson J.B. Students, Teachers and Opportunity Perceptions in Kenya 1961-1968, U.S. Office of Education Monograph, 1969.

Weeks, S., Divergence in Educational Development: The Case of Kenya and Uganda. New York: Columbia University Teachers' College Press, 1967.

By comparing the patterns of educational development in Kenya and Uganda this study documents the nature and extent of the local forces which shape the evolution of the inherited system of education.

Research in Progress

Lanncy, V.B., "A Study of the Sub-Culture of the Adolescent in Kenya", Faculty of Education, University of Nairobi.

Okatcha, F.M., "The Nutrition of Students", Faculty of Education, University of Nairobi.

This anticipated study will investigate the effects of malnutrition on the educational performance of Kenyan students.

Whiting, B., "An Ethnography of Child-Rearing in Various Areas of Kenya", Child Development Research Unit, University of Nairobi.

This project aims "to provide some descriptive data on the current child-rearing practices in different cultural settings. It is hoped that this information will be of use to educationists, social workers and to relevant government ministries."

10.

RESEARCH SUGGESTIONS

Ghai, D.P., "Priorities in Economic Research in Kenya Over the Second Plan Period: 1970-74", Institute for Development Studies, Staff Paper Number 90, University of Nairobi, 1970.

This paper summarises the priorities for economic research and includes a useful section on "Training and Education".

Institute for International Educational Planning. "Educational Planning: An Inventory of Major Research Needs", Paris : IIEP, 1964.

This report suggests 25 important interdisciplinary research projects in the field of educational planning. Although produced in 1964, most of these projects still have relevance for Kenya.

Somerset, H.C.A., "Educational Research in Kenya: A Personal Viewpoint", Institute for Development Studies, Discussion Paper Number 97, University of Nairobi, 1970.

Somerset sees the following priorities for educational research in Kenya: a) Methods of improving educational selection; b) Teacher recruitment, training and retention; c). Reasons for resistance to education in certain areas.

Wallace, T. and Weeks, S.G., "A Survey of Research on Education in Uganda", Education in Eastern Africa, Vol. 1, No. 2, 1970.

This article surveys some of the research in the social sciences related to education in Uganda/proposes areas and projects for future research, many of which are applicable to Kenya.

Research Findings on Education

A list of "priority" projects could quickly be drawn up on the basis of the numerous gaps in the preceding survey of research. However a number of lists of useful projects, directly or indirectly applicable to Kenya, already exist.⁶ Such lists, while necessary, tend to reflect the compartmentalised concerns of particular individuals and their respective academic disciplines, the narrow exigencies of the latest crises or at worst irrelevant preoccupations transposed from another continent. There is a danger that the concern to identify inevitably circumscribed projects overlooks the inter-relationships of educational activities and the broad objectives of educational enquiry. There is always a need for more research. The important consideration is to ensure that projects which are devised relate to each other in overall conception and reflect a wide consensus of informed, concerned and local opinion. Thus rather than add another personalized list of research priorities we attempt in the remainder of this paper to high-light some of the major empirical findings about education in Kenya, to identify salient characteristics of the research which produced them, and to suggest some strategies for further enquiry.

The defining structural characteristics of the Kenyan educational capability are the stuff of frequent reports and can be briefly enumerated. The education system is hierarchical in structure, predominantly academic in content, formal in style, exclusive in nature, urban in orientation and international in reference. Education is categorized by levels of attainment with entry to each successive level and access to its rewards determined by an increasingly restrictive series of public examinations geared to an international certification system. At the same time the prevailing educational reward structure seems to give precedence to academic rather than technical achievement, examined rather than demonstrated ability and formal rather than informal means of attainment. Furthermore it is geared to the needs of urban rather than rural areas and benefits youth rather than adults. This is a familiar if terse characterization.⁷ Less familiar is any qualitative enumeration of the social forces which both press upon and derive from the particular characteristics described. From the preceding bibliography of research it is possible, adopting a sociological perspective, to identify some of these factors, and doing so is a useful prelude to consideration of future research directions.

1. The power and pervasiveness of educational demand:

A major conclusion from the research surveyed concerns the strength of educational demand. Perhaps the outstanding fact about education in Kenya is that everyone wants it and they want it more than any other single commodity. The strength of the educational incentive is conveyed in the fact that demand for education is increasing at the same time that employment prospects are worsening for all but those with most education.⁹ It seems likely that the strength and nature of educational demand exert a dominating influence upon the performance of education's varied functions. Some evidence for this proposition is contained in the findings of past research.

2. The motivation, mobility:

Students value education less for its contribution to personal, intellectual, or national economic development than because it is seen as the principal means to material gain and social mobility. This is

the most conclusive single finding of educational research.¹⁰ Student priorities would appear to be a rational response to an economic context where salaries increase geometrically with the years of formal education and where there are few alternative channels of mobility. Parents tend to share the instrumental view of education held by their offspring while emphasising family benefits.¹¹ Teachers by contrast, and perhaps inevitably, tend to see education in terms of the individual and national improvement which they believe they are purveying.¹²

3. The concept, academic

Because relatively high rewards attach to formal academic attainment public demand for education tends to be highly specific. It is not a demand which corresponds to an individual's abilities and the needs of the economy but for formal academic exam-oriented courses. The best example for this tendency is the way in which Harambee schools have striven to imitate the traditional academic secondary schools.¹³ Illustrating the same point Silvey shows that secondary students in Uganda are reluctant to accept a type of training which leads to less than the highest academic qualifications, despite their pessimistic awareness that their chances of achieving this level of aspiration are poor.¹⁴ The point is not simply that of the previous paragraph that students prefer the type of schooling which permits greatest rewards, but that their concept of education may be unidimensional. Education by definition refers to formal academic instruction which takes place in stone buildings and leads to mastery of an abstract body of knowledge.¹⁵

4. Quality diluted, innovation suppressed

The accelerating demand for education has major consequences for the quality of the product throughout the education system. The attempt to meet the demand by the central government and local self help has led to a narrowing of curriculum in many schools, employment of less qualified teachers and dependence on poor facilities.¹⁶ The preoccupation with containing and controlling expansion has inhibited policy by deterring departure from the known colonial model. Most visibly it has produced the situation where the supply of secondary school leavers exceeds the demand of the labour market.

5. Competition and exclusion:

Since access to successive levels of education is limited and the rewards of access high, selection examinations take on major significance. A number of researchers have drawn attention to particular consequences of this high pressure situation. There is first of all a tendency for the competition to begin increasingly early in a child's life - as evidenced by the growth of selective nursery schools¹⁷ - and to continue increasingly late with students opting for post doctoral qualifications.¹⁸ Secondly the high rewards attaching to examination success encourage students to repeat their final year of primary school. The findings of Brownstein and Sheffield and Fordham indicate that in any one year as many as 30% of those sitting the KPE examination may be doing so for the second or third time.¹⁹ As Brownstein points out repeaters divert much needed resources from alternative investments to fees, take up school places and create a pervasive and unproductive cycle in which repeating becomes a recognized and even necessary strategy.²⁰ Thirdly the incentives of education encourage the uncontrolled spread of private schools. Finally and most important the terms of the competition

result in a majority of "losers" whose self esteem may be damaged and whose unfulfilled potential and attendant frustration constitute the problem of "leavers" about which there is such widespread concern.²¹

6. Secondary school hierarchy:

A further consequence of the pattern of educational demand, dramatized by Somerset, is that Kenya secondary schools tend implicitly to be ranked by parents and students according to their perceived ability to guarantee social mobility.²² This classification corresponds with structural features, so that national catchment schools rank highest and Harambee schools lowest in public estimation, hence the ubiquitous demand for the government to take over the latter and the repeater phenomenon to avoid ending up in them. However the public ranking does not fully correspond with the actual present achievement levels of the various types of secondary school. Rather reputation reflects the public prominence of former students. The important consequence of this situation is that students tend to be socially defined and to define themselves according to the type of school which they attend. Somerset shows for instance, how the type of reputation of the school attended can influence the occupational aspirations of students to some extent irrespective of individual achievement. Specifically, high reputation - i.e. national catchment schools with distinguished alumni - tend to inflate aspirations of low achievers while low quality schools can depress aspirations of some high achievers.

7. The back-wash effect of higher levels:

Specified types of lower level education are a pre-requisite for higher level entry. While this situation is hardly unique to Kenya it does, as Fields points out, help to explain why demand for education can continue to increase at the same time as employment prospects for each level worsen.²³ A further implication of this situation is that each level of education will exert a powerful and pervasive backwash effect on the preceding levels. The university which is at the pinnacle of the educational incentive system will because of what it promises dominate practices and aspirations throughout the education system. Foster goes so far as to claim that the curriculum of the university will inevitably determine what students can be taught in primary and secondary school irrespective of nominal syllabuses or teacher intentions.²⁴

8. The University, questionable instrument of development

Research on higher education in Kenya has tended to treat universities as instruments of development and examined their contribution to manpower training and allocation and to the social goals of development implicit in the concept of nation building.²⁵ If, as was implied in the previous paragraph the university is the pinnacle of an incentive system it is likely to have an impact beyond the schools which feed into it. Because the university has a virtual monopoly on the investiture of social roles it tends to be arbiter of social values. These values as obstacles or catalysts may well be just as crucial to development as its more obviously developmental activities of manpower training and social integration.²⁶ An interesting and open question is not simply what social values are manifested by students but what are their channels of percolation to the rest of society and more important what are the activities and structures of the university which contribute to them. As Leys has pointed out:

"Quite apart from what is taught, the teaching context - the organization of university life, the career implications of courses etc. - is heavily impregnated with social values."²⁷

9. Assess constrained, performance unpredictable.

There are significant differences in regional and individual access to education in Kenya and corresponding differences in performance after selection.²⁸ Some headway has been made in explaining these differences.

The disproportionately small number of girls attaining to each level of education can probably be associated with the incentive aspect of education. Mbilinyi's work in Tanzania suggests that it is not mainly traditional attitudes towards women which account for parental reluctance to educate girls. The reluctance instead reflects in large part a careful calculation of the relative family returns to sponsoring the education of a son rather than a daughter in a situation where resources are not available for both.²⁹

Differences between regions in access to education are clearly due to a combination of economic and social factors. These are often manifested in the relative quality of regional primary schools. Somerset has found that the quality of a student's primary school has an irreversible effect on subsequent academic performance.³⁰ However little work has so far been done to devise criteria by which primary schools might be assessed as to the quality of the education which they provide. At the individual level however a variety of important information is emerging on the extent to which family background factors and pre-school experiences determine recruitment and subsequent performance.³¹ Munroe for example has produced fairly conclusive evidence, from Maragoli and peri-urban Nairobi, to support the hypothesis that children from homes which demand high rates of child-parent obedience are more inhibited in their intellectual development than children whose homes permit relatively greater opportunities for self-assertion.³²

What is also increasingly clear is that in Kenya as in Uganda the secondary school selection examination is a poor predictor of secondary school performance, except probably for the best and worst performers.³³ Work is currently under way on the development of aptitude tests which are suitable for East African conditions as alternatives to the present examination content which places a high premium on memorizing a vast body of knowledge.³⁴ The ideal is an aptitude test which while a valid predictor of secondary school performance is not dependent on amassing academic knowledge. Because of the incentive aspect of the school structure it is only when secondary selection is divorced from a knowledge test which anticipates secondary school curriculum that the primary curriculum will be able to cater to the real needs of the majority and perhaps give the lie to Foster's proposition referred to in section seven.

10. Education and employment: a close but irrelevant relationship:

The Secondary School and University Leavers Tracer Project is providing important base-line information on the patterns of articulation between training and subsequent employment. We know for example that the allocation of secondary leavers to at least their first job bears a strong relationship to their EACE performance.³⁵ Working from the project's assumption that employment history remains the best guide to future

planning there seems to be great scope for tracing the employment histories of students from the whole variety of different types of training scheme. However as employers have to accept whatever products the schools provide, information derived in this way tells us little about the relevance of training acquired to subsequent productivity of the individual. Such important information can be gained from studies which start at the employment end of the chain and analyse the performance and productivity of workers from different types of educational experience and background. Of this type the Marris and Somerset study of African businessmen is rich in its implications for notions of relevance in education.³⁶ By showing that there is no simple relationship between amount of education and entrepreneurial skills the study points to a whole uncharted area of the optimal mix of formal schooling and on the job training in worker productivity.

The articulation between education and employment has also been approached by examining motivations and expectations. While the motivations of students and to a lesser extent parents are initially geared to the university trail there is increasing evidence to suggest they quickly re-adjust their sights in face of disappointment and settle for alternatives. For example researchers are agreed that while students may have inflated aspirations their expectations about what they can gain with their education are fairly realistic.³⁷ There is much less certainty on the factors which are associated with the development of particular second order motivations and decisions on alternatives. At one end of the education-employment continuum primary leavers quickly arrive at the point where they will settle for any kind of wage paying employment.³⁸ Closer to the centre of the continuum it is clear that part of the problem of educated unemployment is the operation of certain rigidities in the concept of job qualifications. Tracing how and why such rigidities are perpetuated, assuming that they are, would tell us much about ways in which the education and employment systems can adjust to each other. To this end it would be instructive not simply to trace students to their current employment or unemployment but to investigate jobs which they rejected along the way and the reasons for their rejections. Perhaps more important are motivations outside the sphere of formal schooling. Exploratory investigation has led to the claim that village polytechnics represent the first signs of demand for a type of education which is geared to rural life.³⁹ However we can only speculate on the important question of what factors are associated with the emergence of such demand. They are likely to be of various types. In the first place are probably inducement factors such as perceived opportunity for employment as a result of technical multi-purpose training. Secondly motivation may be a response to organizational characteristics of the polytechnic itself. Thirdly patterns of motivation and aspiration may well be influenced by family, cultural or situational factors which operate irrespective of the actual disposition of opportunities.

11. Education: A questionable investment:

We know with increasing precision what amounts are being invested in education in Kenya.⁴⁰ We have only fragmentary evidence to suggest what the consequences of private and public investment are and what criteria ought to govern such investment. The outstanding conclusion in this field emerged from the study of Thias and Carnoy in their view that proportions and patterns of public and private investment in education were not justified on economic grounds alone.⁴¹ Two broad questions are raised by this assertion. The first is whether alternative

patterns of public and private investment in education would result in greater economic benefit and the second concerns the kind of non-economic benefits which accrue to educational allocations. Work is in progress on both these complex issues but is currently insufficient for any definitive conclusions.⁴² With regard to the first question Rogers has adduced evidence to support the argument that financing university education by a loan programme would serve both an economic and welfare function.⁴³ Somerset, with powerful logic but scanty evidence, has argued for a shift in educational investment in Kenya in favour of the primary level of education.⁴⁴

The question of what non-economic benefits result from education has been merely touched upon at the individual and national levels. At the individual level research on parental reasons for sending children to school has emphasized the economic motivation. But at least one study reports that parental desire for family welfare is accompanied by a perception of the school as a useful guardian, and it seems likely that another operating motive is a straight forward sense of parental self esteem at having children in school.⁴⁵ At the national level the Kenya government's goal of providing universal primary education suggests a faith in the importance of non-economic benefits. The two available pieces of work which bear on this subject reach different conclusions. One dealing with university students suggests that education is essentially malintegrative in reinforcing historical and social cleavages.⁴⁶ The other implies that at the secondary level schooling serves a homogenizing or integrative function.⁴⁷ The two are not mutually exclusive but neither conclusion can be accepted without a more systematic attempt to enumerate and assess the full range of non-economic benefits, including such things as improved organizational ability, receptivity to innovation, improved consumption patterns, the benefits of a literate electorate, etc.

None of the findings which have been summarised under various propositional headings are themselves unfamiliar to any observer of the Kenya educational scene. Assembling them together has served to emphasize and illustrate the positive contribution which past research has made to increased understanding of education in Kenya. In the following section we turn from characteristics of research output to summarize some characteristics of the research activity itself as an aid towards decisions on future directions.

2. Characteristics of Educational Research Procedure

A number of general conclusions about research activity can be drawn from the survey presented in this paper:

1. Research on education in Kenya appears to be an accelerating phenomenon as a significant proportion of the entries refer to ongoing or proposed research.
2. It is almost entirely the work of non-Kenyans.
3. It emanates from a variety of institutions.
4. Perhaps because of the preceding point individual projects display little evidence of being part of any coordinated activity.

5. With a number of notable exceptions researchers have shown scant regard for systematic reporting of their methodology or presentation of their data, without which comparative evaluation of results becomes impossible.

The implications of each of these points are worthy of discussion and we may wish to pursue some or all of them in the seminar. Three other general characteristics of past research are less obvious than the preceding parts, and hence deserve more immediate scrutiny:-

6. Research by and large has been concerned with single circumscribed aspects of educational problems. In particular it has concentrated upon the technical rather than the social function of education.
7. In general research has been concerned with criteria of educational quality which are internal to the existing schooling structure rather than geared to its relationship to its wider environment.
8. Most of the past research has contented itself with the description and elaboration of widely recognized problems. Although "policy recommendations" are tacked on to the end of most research reports the studies themselves are not formulated in such a way that the evidence is comprehensible and is in itself suggestive of lines of solution.

The amplification of these three tendencies of past research may help to move us towards new strategies of research and especially those which relate to policy.

We can probably all agree that the ultimate purpose of research on education is to permit assessment of the outcomes of any educational practice or policy. The problems facing any empirical assessment are firstly that consensus on criteria of educational quality are hard to achieve and secondly that priorities or objectives of educational policy are rarely formulated in precise and operational terms. Criteria for assessing educational practices are only relevant if the objectives of that policy are clear and can only be meaningfully applied if its comprehensive consequences are known.

Criteria: Internal and External

As soon as the task of assessing an educational practice are embarked upon one encounters the problem of reconciling the variety of approaches brought to bear by different social science disciplines. The economists' emphasis on material cost benefit criteria contrast with the educators' concern for the self-fulfillment of the student. The sociologist in turn may emphasize access to education and consequences for role allocation, while the political scientist is interested in relationships between education and dispositions of authority. It is clearly premature if not undesirable to attempt to give weightings to these emphases as hard and fast criteria. A more immediately useful distinction is that between internal and external criteria of quality.⁴⁸ The first refers to criteria established by the education system itself such as its examination structure, rules of organization or financing. The latter refers to notions of fitness and relevance of educational structure and practice to their outside economic

and social environment. The application of even these broad criteria relies upon the degree of precision with which educational objectives are formulated.

Objectives: Technical and Social

The Kenya education system is expected to perform the familiar dual function expected of most such systems. These are the technical function of furnishing future manpower with requisite skills and knowledge, and the social function of inculcating in all students "values which contribute to individual enrichment and the maintenance of a cohesive society".⁴⁹

Concern for the technical function has led to that research which has aimed at increasing efficiency in selection, training and allocation of talent. Research in this category includes economic studies, such as that of the World Bank, focussing on optimal investment patterns for economic growth, and also those of anthropologists and psychologists examining, for example, cultural and personality factors related to intellectual development and efficient skill learning. To the extent that such research has relied on internal criteria of assessment it has assumed the basic structural inviolability of the existing education system and concentrated on improving its internal efficiency.

The bulk of research relating to education in Kenya has indeed concentrated upon the technical outcomes and utilised internal criteria of quality. This is partly a natural response to the priority of simply maintaining the educational service in the face of every-day pressures. It also stems from the fact that technical objectives have been formulated with relative precision in operational terms and internal criteria of assessment are readily available. Thus there is consensus that effective performance of the technical function requires at minimum that selection is related to individual potential, training is relevant to future activity and numbers selected in various categories bear some approximation to available openings in the economy. At the same time the prevailing examination structure provides a relatively precise, if self-established yardstick of performance and past teaching methods and the existing school organization a proven means of achievement however inadequate these might seem by hypothesized external criteria of relevance.

The objectives of the social function of education in Kenya are by contrast relatively unformulated beyond vague invocations for schools to be instruments of egalitarianism, rural orientation and Kenya nationalism. There has been correspondingly little research in Kenya which aims to enumerate either internal or external criteria of social effectiveness. At the same time it remains the case that present educational practices in Kenya have major social effects, some of which were described in the previous section, and these have to be taken into account in any overall assessment of performance.

While research has tended to concentrate on technical outcomes of education, a number of attempts to conceptualize the inter-relationship of educational functions has been made.⁵⁰ Reference to one of these attempts serves to illustrate the importance of research strategies which take account of both technical and social outcomes.

Anderson, following Foster, has suggested that there is a fundamental incompatibility between the socializing function of Kenyan education - the inculcation of desirable unifying social values - and its selective or allocative function.⁵¹ Government intent for the former function is to instil the harmonizing virtues of "Harambee" and national unity. The effect of the realities of selection and competition is to stress differentiation. Foster sees the primacy of the allocative selective function as both inevitable and desirable. Anderson regards the social consequences of incompatibility as dangerously disintegrative and ultimately insupportable within the existing educational framework.

The issue remains open for empirical specification and centres in part on the extent to which schools can initiate social change which is at first contrary to the inclinations of the wider society of parents and students. Can, for example, a rural, a national or even a socialist orientation be inculcated in a society where education is perceived in terms of individual mobility? Research into this important question would need to investigate the relative influence of family background, societal and school organizational factors in determining the impact of a school upon the orientations of its students in Kenya. This area of research assumes particular importance because of the tendency of educators to place great faith in curriculum change and teachers as vehicles for the inculcation of social values. Yet there is very little evidence to confirm the consequences of any specific curriculum or teacher training programme. There is some evidence from Tanzania to indicate that internal school factors do influence student attitudes but that informal aspects of school "atmosphere" may be more important than formal curricula, organization or characteristics of the teaching body.⁵² Educational developments in Tanzania are particularly illustrative of the point being made because in policy if not in research Tanzania is treating the social and technical functions of its educational system in a unified way.

Problem or solution oriented research

The very familiarity of the research findings which were emphasized in this paper suggests that the main contribution of past research has been to codify our common sense about educational problems. Much of the research has been of the purely descriptive variety, e.g. that which has surveyed the provision of adult education or the financing of primary education. Another type has served to elaborate fairly familiar problems, e.g. studies of student career preferences. To point this out is not to denigrate such types of research. Clearly in a country with a relatively recent research tradition the compilation of basic descriptive data is an essential pre-requisite for both policy and further research. However the very scarcity of resources for research makes it inevitable that solutions for major policy problems constitute a priority objective. Measured against this objective research on education in Kenya fares poorly. With the notable exception of the work on selection procedures it is difficult to pin point areas of present policy which have been significantly altered by most research findings.

The above judgement may well be overly harsh and can be verified by policy makers. It may alternatively be simply a comment on the amount of lead time which is necessary before a given research finding gains widespread application. It is not intended here to raise the familiar and misleading dichotomy between "basic" and "applied" research. Rather the intention is to point out that past research has in general been concentrated on the elaboration of problems, and to raise a question as to

whether the same research could not be formulated in ways which might enable the data itself to be more suggestive of lines of solution than appears to have been the case in the past. Policy involves the choice between different solutions of the best means of attaining specified objectives. The establishment of objectives and decisions on policy are the preserve of politicians and educators. The task of social science research is surely to present its evidence in ways which identify solutions and their variable consequences.

Strategies for Further Enquiry

If the foregoing analysis of salient characteristics of past educational research has any validity it implies a number of possible strategies for further enquiry. The analysis points to the need for broadly conceived research strategies which take into account the full range of implications of any educational practice, that is to say consequences falling both inside and outside the education system and which include both technical and social outcomes. The second point implied is the need to consider the possibility and methods of achieving solution-oriented research. Two broad strategies and an accompanying principle of operation are suggested for discussion:-

1. One possible procedure would be to start with a significant element of the educational apparatus and to investigate the full range of its implications. Thus for example we might select the present structure of the curriculum, school administration, organization, selection methods or pattern of financing. The research objective broadly stated would be to identify the factors which bear on the operation of each element and to trace its comprehensive consequences in terms of educational, social and economic objectives.
2. A second possible strategy would reverse the above approach and begin by defining a significant economic or social objective to which education is expected to contribute, such as economic growth, political stability, social equality or cultural autonomy. The research task would then be to investigate the range of aspects of schooling which touch upon these objectives.
3. On the assumption that past research has unnecessarily restricted itself to describing problems, it might be useful to accompany consideration of research strategies with thought on the validity and implications of the notion of policy relevance. One specific task might be to see whether we can devise any principles which might usefully condition research procedures in ways which enhance the likelihood of their contributing to solutions to policy problems.

As presently expressed the above are no more than gross notions, but it might be useful for the seminar to give thought to their utility and to how they might be formulated in researchable terms. Additionally we might try to identify other perhaps more useful strategies for educational research. The practical implications of pursuing the strategies suggested or any others are wide open. Following up any of the broad questions raised would be a multi-disciplinary activity. At one level of collective investment in the task we could identify a significant problem, resolve to gather systematic data on that problem and break up into small groups to investigate its definable aspects. An initial move in this direction might be to spend some time discussing principles and identifying problems and then to bring

to bear in formal sessions our separate current work relating to the problems identified. A more cautious level of investment would simply be an agreement to rationalize our research activities, perhaps on an institutional basis, and to pool our knowledge more frequently and more effectively than appears to have occurred in the past. One of the most obvious pay-offs to any such rationalization might be a policy on optimum means of storage and diffusion of educational information, now that it is relatively easy to store large sets of data. In any event the case for those who are interested in educational research giving greater form and direction to their activities seems strong.

Conclusion

This paper has surveyed some findings from research on education in Kenya and singled out some salient characteristics of that research. A sociological perspective has been adopted in an attempt to draw the diverse emphases of educational research into a unified focus. The consequent conclusion has been a call for consideration of broad research strategies which encompass a variety of disciplinary approaches and which take account of the full range of implications of any educational practice. The objective throughout has not been to abrogate responsibility for deciding needed projects but to stimulate thought on ways of improving our collective research enterprise.

FOOTNOTES

1. The inventory which forms the basis of this paper was compiled from information supplied by a number of individuals in different institutions. I would like to acknowledge the helpful contributions of Richard Logan of the Child Development Research Unit; Mervyn Pritchard, Filimona Indire, Fred Okatcha and Albert Maleche in the Faculty of Education; P.G.H. Hopkins, David Marcharia, John Okach and Peter Kinyanjui in the Institute of Adult Studies; S. Kihumba of the Board of Adult Education; Leah Kipkorir and Ronald Hughes of the Kenya Institute of Education; John Gerhard of the Ministry of Finance and Economic Planning. In addition the paper reflects some suggestions of Kenneth Prewitt and Tony Somerset of the Institute for Development Studies.
2. Virtually every writer on education in Kenya concludes with a call for wholesale reform. See for example John Anderson, The Struggle for the School, Nairobi, Longmans, 1970, pp. 163-166.
3. Republic of Kenya, Development Plan: 1970-74, Nairobi, Government Printer, 1969.
4. For an economist's assertion of this point see Hans Thias and Martin Carnoy, Cost Benefit Analysis in Education: A Case Study on Kenya, Washington D.C., International Bank for Reconstruction and Development, 1969, pp. 210-215.
5. Reports used included "Research and Publications", Institute for Development Studies, January 1971; "Progress Report", Child Development Research Unit, February 1970; "Education in the Developing Countries of the Commonwealth: Abstracts of Current Research", 1969; "The Role of the Institute of Adult Studies in the Development of Kenya", February 1970.
6. These are listed in section 9 of the preceding summary.
7. An excellent description of the basic economic facts which surround the education system is contained in Gary Fields, "The Education System of Kenya: An Economist's View", Discussion Paper No. 103, Institute for Development Studies, 1971. In part the present paper is intended to supplement the view of the economist with that of a sociologist.
8. Statistics illustrating this increasing demand are contained in Hans Thias and Martin Carnoy, Cost Benefit Analysis in Education: A Case Study on Kenya, p. 23.
9. See Gary S. Fields, "Private and Social Returns to Education in Labour Surplus Economies", Discussion Paper No. 104, Institute for Development Studies, 1971.
10. See for example, David Köff, "Education and Employment: Perspectives of Primary Pupils", in J. Sheffield, ed., Education, Employment and Rural Development, Nairobi, East African Publishing House, 1967.
11. Kenya Institute of Education, "Combined Research Project", Mimeo, 1970.
12. The preliminary conclusions of Robert Catlett confirm the findings of the K.I.E. "Combined Research Project" on this point. See Section 6 of the research summary.

13. John Anderson, "The Harambee Schools: The Impact of Self Help", in R. Jolly, ed., Education in Africa, Research and Action, Nairobi, East African Publishing House, 1967.
14. Jonathan Silvey, "The Occupational Attitudes of Secondary School Leavers in Uganda", in Richard Jolly, ed., Education in Africa: Research and Action.
15. For a cataclysmic prediction of the consequences of this situation see Ivan Illich, Celebration of Awareness, New York, Doubleday, 1970, pp. 106-137.
16. These are the conclusions of Peter Kinyanjui, "Further Education, Training and Employment of Kenya Secondary School Leavers", Education in Eastern Africa, forthcoming.
17. See John Herzog, "A Preliminary Survey of the Parents of Nursery Centre Children in Four Communities in Kenya", Mimeo, 1969.
18. M.N. Kendall, "Kenyan Students in Great Britain and Ireland", University of London Research Unit for Student Problems, 1970.
19. Paul Fordham and James R. Sheffield, "Continuing Education for Youth and Adults", in James R. Sheffield ed., Education, Employment and Rural Development. L. Brownstein: "Preliminary Results of a Survey of 1964 KPE Candidates in Embu, Kitui, Kericho and Nyanza", Staff Paper No. 11, Institute for Development Studies, 1966.
20. L. Brownstein, 1966.
21. For an eloquent expression of this concern see National Christian Council of Kenya. After School, What?, Nairobi, East African Publishing House, 1968. For some interesting notions on its alleviation see Emil Rado, "Education Policies and Planning for Jobs," paper prepared for I.L.O. Meeting on Employment Policy, Kericho, May 1971.
22. H.C.A. Somerset, "Educational Aspirations of Fourth Form Pupils in Kenya", paper read at the Universities of East Africa Social Science Conference, Dar es Salaam, 1970.
23. Gary Fields, "Private and Social Returns to Education in Labour Surplus Economies".
24. Philip Foster, "Education for Self-Reliance: A Critical Evaluation", in Richard Jolly, ed., Education in Africa: Research and Action.
25. An example of such research is that of S.E. Rastad, "Employment Categories of Kenya Graduates of the University of East Africa", Staff Paper No. 73, Institute for Development Studies, 1970.
26. This paragraph paraphrases an argument which is developed by Colin Leys in "The Role of the University in an Underdeveloped Country"; paper read at the Fifth Commonwealth Education Conference, Canberra, Australia, February 1971. For an even more astringent development of this point see Ivan Illich, "Schooling, the Ritual of Progress", The New York Review of Books, Volume XV Number 10, December 3, 1970.

27. Colin Leys, "The Role of the University in an Underdeveloped Country".
28. For data on regional and individual access to education see Thias and Carnoy, Cost Benefit Analysis in Education: A Case Study on Kenya.
29. Marjorie Mbilinyi, "Traditional Attitudes Towards Women: A Major Constraint on Rural Development", paper read at the Universities of East Africa Social Science Conference, Dar es Salaam, 1970.
30. H.C.A. Somerset, Predicting Success in School Certificate, Nairobi, East African Publishing House, 1969.
31. See Progress Report, Child Development Research Unit, February 1970.
32. Robert Munroe, seminar presentation of research findings.
33. This is the conclusion of the work of both Somerset and the Kenya Institute of Education on the secondary school selection examination. See section 5 of the summary of research.
34. See section 5 of the summary of research.
35. Peter Kinyanjui, "Further Education, Training and Employment of Kenya Secondary School Leavers".
36. Peter Marris and Tony Somerset, African Businessmen, London, Routledge and Kegan Paul, 1971.
37. Support for this conclusion is provided by David Koff, "Education and Employment: Perspectives of Kenya Primary Pupils" and Tony Somerset "Educational Aspirations of Fourth Form Pupils".
38. L. Brownstein, "Preliminary Results of a Survey of 1964 KPE Candidates in Embu, Kitui, Kericho and Nyanza".
39. John Anderson, "The Village Polytechnic Movement", Institute for Development Studies, August 1970.
40. This is apparent in the increasingly precise statistics which inform Government documents.
41. Thias and Carnoy, Cost Benefit Analysis in Education: A Case Study on Kenya.
42. Fields is currently working in this area. See section 8 of the summary of research.
43. D.C. Rogers, "The Returns to Investment in Higher Levels of Education in Kenya", Institute for Development Studies, 1966.
44. H.C.A. Somerset, "Educational Research in Kenya, A Personal Viewpoint", Discussion Paper No. 97, Institute for Development Studies, 1970.
45. John D. Herzog "A Preliminary Survey of the Parents of Nursery Centre Children in Four Communities in Kenya".
46. R.E. Koplin, "Kenya Students", in W. Hanna and S.M. Lipset, African University Students and Politics, Basic Books, forthcoming.

47. David Koff and George Von der Muhll, "Political Socialization in East Africa", The Journal of Modern African Studies, Vol. 5, No. 1, 1967.
48. For a discussion of this see Philip Coombs, The World Educational Crisis, New York, Oxford University Press, 1968, pp. 104-107.
49. Republic of Kenya, Development Plan: 1970-74, Nairobi, Government Printer, 1969.
50. These are: John Anderson, "Socialization and Selection: Incompatible Functions for Schools in Developing Countries", Staff Paper No. 65, Institute for Development Studies, February 1970; Colin Leys, "The Role of a University in a Developing Country"; and Kenneth Prewitt, "Schooling, Stratification, Equality", in M. Kirst ed., The State, the School and Politics, forthcoming.
51. John Anderson, "Socialization and Selection: Incompatible Functions for Schools in Developing Countries"; Philip Foster, "Education for Self Reliance: A Critical Evaluation".
52. David Court, "Schooling Experience and the Making of Citizens: A Study of Tanzania Students", Stanford University, unpublished dissertation.