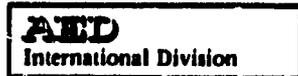


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Rural Primary Schools Extension Project:

Radio Language Arts

Second Annual Report

September 26, 1980, to September 25, 1981

Project Director

Maurice Imhoof

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RADIO LANGUAGE ARTS PROJECT

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ANNUAL REPORT

RADIO LANGUAGE ARTS PROJECT

SEPTEMBER 26, 1980, to SEPTEMBER 25, 1981

I. INTRODUCTION

The Rural Primary Schools Extension Project: Radio Language Arts (referred to hereafter as the Radio Language Arts Project or RLAP) is a five-year research and development project funded by the Office of Education, Bureau of Science and Technology, of the U.S. Agency for International Development (AID), designed to develop, implement, and test the effectiveness of an instructional system which uses radio to teach English as a second language at the primary-school level (standards one to three).^{*} Both qualitative and cost aspects of effectiveness will be tested in this pilot project. The end product will be a radio-based English-language program for standards one to three complete with taped lessons (approximately 195 lessons of 30 minutes each for each school year, appropriate tests, teacher orientation materials, and classroom observation and data-gathering procedures). Although the project has been designated for specific application in Kenya, it is expected that the model which emerges can be replicated, with modifications, to other educational systems in the developing world.

At the time of the original project design (1979), a specific project site had not been designated. After considering several African nations, Kenya was chosen in November 1979, and the project was modified and elaborated for use in Kenya by a joint team of Kenya and U.S. specialists. The principal Kenya entity in the project is the Kenya Institute of Education (KIE) representing the Ministry of Basic Education, and the principal U.S. entity is the Academy for Educational Development (the Academy).

The general project design is an extension of the instructional model developed by AID and the Institute for Mathematics Studies in the Social Sciences (IMSSS), Stanford University, between 1973 and 1978, when a primary-school mathematics project was conducted in Nicaragua, Central America.^{**}

The current report covers the substantive initiation of field activities under the Radio Language Arts Project. The American field team arrived in Kenya in early October 1980. The selection of the Kenyan team members followed soon after. The process of orientation to the Kenyan primary educational system and the process of establishing working relationships and delineating individual team members' roles consumed much of the time during the early months of the project. The development of strategies and instruments,

* Kenya uses the term standard to denote the U.S. term grade.

** Radio Mathematics in Nicaragua, edited by Jamesine Friend, Barbara Searle, Patrick Suppes; Institute for Mathematical Studies in the Social Sciences, Stanford, California, 1980.

as well as testing these in the schools, consumed the remaining months of 1980. The complex interrelationships between curriculum revision for the radio medium, radio lesson writing and production, formative and summative evaluation, collection of baseline data, and implementation plan development presented formidable tasks for the team during this first year of field operation.

II. PRINCIPAL OBJECTIVES FOR THE PERIOD

- A. Place the field team in Kenya.
- B. Procure and ship equipment.
- C. Establish working relationships and understand Kenyan priorities for the program.
- D. Identify Kenyan team members and Kenyan support staff.
- E. Develop tentative research plan.
- F. Tentatively select schools.
- G. Conduct sociolinguistics survey.
- H. Select schools.
- I. Try out lesson formats and production.
- J. Develop Scheme of Work.
- K. Develop testing instruments and observation scheme.
- L. Develop detailed implementation plan.

III. ACTIVITIES UNDERTAKEN

In the following section, the activities undertaken for the project during its second year are discussed in relation to the objectives listed in Section II.

A. Place the Field Team in Kenya

Final plans for fielding the American team were developed immediately upon the signing of the project agreement on August 14, 1980. By early September 1980, three out of the four team members had signed Letters of Appointment with the Academy and had received Government of Kenya clearance. These were Morris Cutler, language arts specialist; Pamela Brooke, educational broadcaster; and Philip Sedlak, language arts specialist. The fourth member, the field coordinator, Philip Christensen, signed his Letter of Appointment on October 14, 1980, and made arrangements to join the team in Nairobi by December 1, 1980.

Following an orientation (described in the RLAP Annual Report, September 26, 1979, to September 25, 1980), held in Washington, D.C., by the Academy, the team was sent to Nairobi at the beginning of October 1980. The logistical unit of the Academy made arrangements for the storage and/or shipment of personal effects and project commodities and travel for team members and their dependents.

Since the field coordinator was unable to join the project on a permanent basis in Kenya until December 1980, there was some initial concern about the team's ability to work effectively and at the same time conduct the numerous logistical details required for the establishment of a project office. Two strategies were decided upon: (1) a logistics support person, Barbara O'Grady, was sent to Kenya by the Academy prior to the team's departure to aid them in

settling in to Nairobi and their jobs, and (2) the project director, Maurice Imhoof, and the AID project monitor, Patsy Layne, both traveled to Nairobi in October 1980 to work with the team in the early weeks of the project. The field coordinator also joined the group in Kenya on temporary duty for one week. O'Grady arranged temporary housing, established liaison with appropriate AID offices, set up temporary office facilities at the Kenya Institute of Education (KIE), contacted real estate agents, opened an external bank account, and undertook a number of other support activities. This helped free individual team members from some of these details and established routine administrative procedures which served until the field coordinator arrived. Layne and Imhoof provided the technical continuity and guidance before Christensen arrived.

The team was provided temporary office space by KIE until a permanent building was built. The building, which the project has rented from KIE, was built according to project specifications and approved by Roy H.J. Thompson, assistant director and head of the Media Division of KIE.

Individual team members arranged for their own housing. Although housing is notoriously difficult to find in Nairobi, all team members found accommodations in good time. The only problem encountered with housing was a strike at the manufacturers which delayed the shipment of household appliances provided for each team member.

B. Procure and Ship Equipment

Anticipated project equipment included basic office equipment for routine administration of the project and script production. Field equipment included project vehicles and classroom radios. The purchase of the above equipment was initiated immediately upon the signing of the project agreement and shipped when available.

Other equipment purchases and shipments were initiated after the team had some experience in the field. Additional purchases included equipment to aid in script and program production. Additional equipment in the first instance was required as the lesson trials, testing procedures, and production cycles made it clear that neither equipment nor personnel were sufficient to meet the production demands. In the case of broadcast equipment, the need was to augment existing facilities at KIE which were inadequate in some instances and over-worked in all instances.

Although there were unexpected delays in some cases of equipment purchases, we were able to get the necessary equipment to the team at the appropriate time. The major exception was in the case of project vehicles. The request to waive purchase of American-made vehicles was initiated early and, although a time-consuming task, was accomplished. Unfortunately, there were further delays caused by price changes and incorrect information from the dealer which meant new approvals were necessary from the AID Contracts Office. When this approval was secured there were problems with the manufacturer because of shipping strikes.

In summary, a series of procedural and manufacturer's delays meant that project vehicles did not arrive in Nairobi until August 1981. This delay necessitated renting a minimum number of vehicles in order to carry out field

work during the period from October 1, 1980, to August 1981. Renting vehicles in Nairobi proved expensive because of high local demand and the high purchase price of vehicles there. This has put a further burden on the travel budget already affected by the significant inflation of air travel costs.

In order to compensate for these high transportation costs, we delayed the purchase of a fourth project vehicle. Field experience, however, convinced us that not only was the fourth vehicle necessary but that it had to be a four-wheel-drive vehicle. Procedures for obtaining approval were initiated in the fall of 1981 for purchase of a Land Rover in Nairobi which should be available before the beginning of the school broadcasts in January 1982.

C. Establish Working Relationships

In addition to previously established working relations, the October 1980 trips by the project director and the field coordinator had as a primary objective the establishment of working ties with the appropriate members of KIE, the Ministry of Basic Education (MOBE), and the AID Mission. To this end, several meetings were held with Roy Thompson, assistant director and head of the Media Division, and Jack Menya, assistant director and head of the Basic Education Division. These are the two divisions with which the project works most closely since it is both a media project and a basic education project. Major work is of course with the Media Division in which we operate much like other components, called sections, of the division. Philip Christensen, field coordinator of the project, serves in relationship to Roy Thompson as section head, reporting to him and seeking his advice on all KIE-related activities. Kenyan and American personnel are directly responsible to Christensen. These early discussions concerned procedural details in administrative support, protocol, and publicity. It was determined that Roy Thompson would be the field coordinator's major liaison and would take responsibility for all required approvals. Specific details on lines of authority and arbitration of issues are covered in the project agreement.

Additional meetings were held with Herbert J. Kanina, director, KIE. The deputy director, Ephantus M. Muguri, was on leave at this time. However, we had been in contact with Muguri from the first site visits and on through negotiations and final agreement.

A meeting was held at KIE in October 1980 and chaired by Menya who introduced the project to the Primary Section of the Basic Education Division. This included the entire American team, the project director, and the project monitor, but not the Kenyan team members who had not yet been identified. There was obvious concern within the Primary Section that the project might interfere with the Primary Education Project (PEP) currently under way by the section. PEP is a curriculum revision project which, among other areas, is revising the English language arts component of the primary curriculum. It is doubtful that all concerns were allayed, but there was a frank exchange of views on the RLAP. It was agreed that cooperation and coordination between the two projects would enhance both programs, that elaborate and formal meetings would not be necessary, but that an exchange of materials produced and small, informal discussions could be useful for both groups.

At the Ministry of Basic Education, Layne, Imhoof, and Christensen met with I. Hunja, director of planning, who had coordinated the signing of the agreement for MOBE. He offered his assistance during the process of selecting schools since his office, through the Central Bureau of Statistics, handles school statistics. During the October 1980 visits, a reception was held, allowing members of MOBE, KIE, AID, and the RLAP to meet in an informal atmosphere.

After the arrival of Christensen permanently, he immediately began to strengthen relationships with key and liaison personnel in the various cooperating institutions. At KIE this included additional key people: Mary Ngechu, head of Audio Section; Joyce Kanina, head of the Primary Section; as well as other members of the Primary Section who are involved with English-language instruction. In MOBE, Ben Ochembro, in the Inspectorate, offered to advise the team during school selection and to assist them in locating observer/evaluators (observers hereafter) to be used in project schools from the staff of the Teacher Advisory Centers in each educational district. During December and January, members of the project would be active. By this time, three Kenyan team members had joined the project. They met with District Basic Education Officers (DBEOs) and in many cases their assistants and other staff members. All of the DBEOs were cooperative and interested in the project.

With the beginning of the school year in January 1981, school visits for observation and lesson trials began in earnest. Again the response from headmasters and teachers was very positive as was student response to sample lessons and lesson segments. Two formal meetings were held during the beginning of the school year to strengthen relations in the Kenyan educational community. The first on February 18, 1981, marked the move of the RLAP to its permanent offices. The meeting was attended by the RLAP staff and all interested personnel from KIE. The meeting was opened by the director of KIE who gave a positive overview of the project. This was followed by a lively exchange of views between KIE and RLAP personnel, particularly concerning the relationship between the RLAP and the Primary Education Project (PEP). It was determined that the two projects would work independently but share information cooperatively.

The second meeting was a writers' workshop organized by the project. It was chaired by Grace Ogot, noted Kenyan author and member of the National Teachers' Appeal Tribunal. Participants included representatives from the Voice of Kenya (VOK), Kenyatta University College, the educational section of Johnson Baby Products, and RLAP members. The purpose of the workshop was to brainstorm on the use of Kenyan themes, stories, legends, and culture in the radio lessons and to elicit support from these influential writers for the project.

Informal contacts and meetings continued throughout the year between the team, especially the field coordinator, and appropriate institutions. The working relationships between the project team members evolved slowly and were strengthened by greater and greater specificity of task assignments and job descriptions.

The project suffered a major morale setback in February when the Nairobi daily English language newspaper, The Nation, published a front page story accusing the project of "using Kenyan children as guinea pigs" and of being "a

secret American project." This incident highlighted a number of concerns, and emphasized the need to keep following three groups of people continually informed about the nature of the project and its potential contribution to Kenyan primary education:

1. GOK high-level officials who have direct control of the project.
2. KIE personnel, both those directly and indirectly involved in the project.
3. Teachers, especially those who are not directly involved in the project and are, therefore, the least informed.

The support of these three groups is crucial to the ultimate interpretation of the program's results into Kenya's exiting radio instruction program. They have a major role in responding to questions and concerns from the public at large which rightly is interested in the best and most relevant education for its children. This will be a continuing priority for the project. There has been early success in containing the adverse criticism and in developing stronger channels of communication between the groups above.

D. Identify and Select Kenyan Team Members and Support Staff

The project agreement specifies that four Kenyan professionals will comprise the Kenyan contribution to the RLAP team. KIE decided to delay selection of these professionals until the arrival of the American team members. Although final selection was in the hands of KIE, criteria for selection and discussion of qualifications were carried out between KIE officials, the project monitor, the project director, and to a lesser extent with team members.

Two of those selected were already on the KIE staff. The educational radio producer was involved in radio production in the Audio Section and joined the team informally even before she was formally assigned to the project. The feedback coordinator was working as the head of the evaluation unit. The third, a language arts specialist, was assigned to the project immediately. The first three Kenyans started their official work in January 1981. The fourth, a second language arts specialist, was more difficult to find. The first round in the selection process failed to identify a suitable candidate.

At the request of the field coordinator, the director and assistant director of KIE agreed to approach the Teacher Service Commission (TSC) to discuss the possibility of advertising the position. In the interim, KIE assigned an additional language specialist temporarily, but for two weeks only. In April 1981, a panel of the field coordinator, the head of the Media Division, and the acting head of the Audio Section, interviewed six persons for the position. A qualified candidate was selected and the TSC was asked to assign him to the project. He was able to join the project in September 1981.

The four Kenyan team members and their qualifications are briefly described below:

1. Margaret Achieng' Ojuando, educational broadcaster, has a B.A. degree with honors in English from the University of Nairobi and a certificate of educational radio production from KIE. She taught secondary school English for five years before joining the Educational Media Service (EMS) at KIE as a media specialist. Radio production work at KIE has included work on audio programs and materials for standard three, Progressive Peak course book; program for standard four geography; Literature in English, forms 3 and 4 (grades 10 and 11); and a number of panels on primary education and English literature.
2. Greg A. Owino, feedback coordinator, has a B.A. degree in education from the University of Nairobi and an M.E. degree in educational evaluation from the University of Ibadan, Nigeria. He taught for two years and joined the Ministry of Education as an education officer assigned to the Educational Media Service at KIE. From September 1978 until joining the RLAP he was head of the Research and Evaluation Section of KIE. He has worked closely with the Primary Education Section of KIE as an evaluation specialist, and coordinated the International Year of the Child research on Kenyan children sponsored by UNICEF.
3. Mary Muthoni Karue, language arts specialist, taught for ten years before obtaining her B.A. degree with honors in education from the University of Nairobi. During this period she taught secondary school, at two different primary teacher-training colleges and a secondary teacher-training college. After graduation, she taught and was head of the English department at Kenya Science Teachers College. In 1980, she graduated from Kenyatta University College with an M.E. in primary education, specializing in language arts and education administration.
4. John Njenga Muitungu, language arts specialist, has a B.Ed. degree with upper second-class honors from the University of Nairobi. He taught first as an untrained teacher briefly before entering the university. After graduation, he taught for three years and served as head of the English department in a secondary girls school. He completed his studies for a masters degree in primary education at Kenyatta College in November 1980 and taught at Highridge Teachers College before joining the project at the end of August.

The American staff, previously identified and described in detail in reports to USAID, are briefly described below:

5. Philip R. Christensen, field coordinator, holds a B.A. from Harvard University, where he majored in social psychology and worked extracurricularly as an announcer and studio engineer at Cambridge radio station WHRB. In 1972 he was awarded an Ed.D. from the University of Massachusetts after concentrating in curriculum and instruction and international education. Prior to joining the Radio Language Arts Project, Christensen was the instructional development specialist for St. Lawrence College in Ontario, where he provided bilingual services

in the areas of curriculum development, staff development, and program evaluation, and managed the Teacher Resource Center, including library and media services.

6. Morris Cutler, language arts specialist, holds a M.S. degree from the University of Southern California. For the Los Angeles Unified Schools he has served as a teacher, administrator, and curriculum specialist, and as an administrative consultant for early childhood education. His prior overseas experience was as an associate in international education, Teachers College, Columbia University in Afghanistan, where he served as an advisor to the Ministry of Education on language arts textbooks, teachers' guides for grades 1 through 6, and as the co-editor of 12 books. Additionally, he has been a lecturer for Pepperdine University and served as a member of the Board of Directors of the California Reading Association.
7. Pamela Brooke, educational broadcaster, began work in media in 1967 as a writer and later as the executive producer of the D.C. Schools Radio Project in Washington, D.C., producing language arts broadcasts for children in urban preschools and primary schools. These programs won nine national awards for their innovative curriculum design and technical use of the media. In 1975 she joined the Smithsonian Institution as a museum teacher specializing in classes that integrated science, art, music, and language arts for children. Magazine articles describing her work with children and in the humanities have appeared in Scholastic Teacher, Smithsonian Art to Zoo, Forecast FM, Humanities.
8. Philip Sedlak, language arts specialist, has studied at Pennsylvania State University, Yale University, and the Free University in West Berlin, and received his Ph.D. in linguistics from Stanford University in 1975, specializing in various areas of applied linguistics, with an emphasis on Kenyan languages. He developed and wrote a series of textbooks on African-language instruction for the Peace Corps. His other areas of publication include theoretical linguistics, sociolinguistics, English as a second language, and African languages. He has had experience in materials development and instruction in ESL at a number of levels in different countries, including longer periods in Togo and Taiwan. He is a fluent speaker of Swahili.

During the fall of 1980, discussions between KIE and RLAP resulted in a decision to hire a technical operator (recording engineer) for the project. It was clear that the level of production would put intolerable strains on the Audio Section technical operators. In addition, the production load and the less than adequate studio facilities required the full-time services of a technical operator. The position was advertised and interviews were scheduled in January 1981. Interviews and a studio test to assess editing speed, technique and sound mixing abilities identified an excellent candidate. The candidate had been working for the project on a loan basis from KIE already and, therefore, needed no further orientation to the project activities.

Reuben Karobia Kiromo, the technical operator, holds a junior secondary certificate. He has been employed since 1968 as a radio producer and technician. He worked for four years at the Voice of Kenya (VOK) as technical

operator and since 1977 has worked at KIE in the same capacity.

Additional Kenyan support staff include:

- 1) Executive Secretary - Julia Amayo
- 2) Clerk Typist - Lynn Okiro
- 3) Field Assistant - George Rege

Following discussions in April 1981, it was decided by the project director, in consultation with the project monitor, to approve the addition of an audio typist. The purpose was to enable the executive secretary to assume more administrative responsibilities, thus relieving the field coordinator of some of these duties so that he could spend more time on substantive technical assistance. The audio typist is Ericah Angala.

Shortly after the project agreement was signed, Roy Thompson requested that the project provide a housing allowance to supplement the base salaries of Kenyan staff members paid by the GOK. This unanticipated request and expense was at first rejected by both the Academy and AID. On the basis of further discussion and an assessment of the housing situation and recruitment problems at KIE by Layne and Imhoof, a formal request for this supplement was made to the AID Contracts Office. Official approval was given in December 1980.

Housing costs in Nairobi and lack of government-provided quarters has been a major recruitment problem for KIE, particularly in attempts to recruit provincial educators. Although this small incentive helped us recruit the professional staff needed, it does place additional constraints on the project budget.

E. Develop Tentative Research Plan

The RLAP research plan was formulated on the assumption that pupils in "X" number of pilot schools or classrooms undergoing the radio language arts treatment would be compared with students in "X" number of schools or classrooms undergoing conventional English language instruction. In addition, the costs of radio lessons would be compared to the costs of conventional textbook instruction. On the basis of the Radio Mathematics Project and in consultation with Barbara Searle, Institute for Mathematics Studies in the Social Sciences, Stanford University, it was determined that 20 pilot schools would provide an adequate sample for statistical analysis of student performance.

Major concerns in developing a tentative research plan were to select a representative sample of schools or classrooms, to gather adequate data to insure comparability of classrooms, and within the constraints of the research requirements to find schools which were accessible to the formative and summative evaluation personnel.

The tentative plan was to identify two sets of 20 schools matched on a number of variables, mainly mother-tongue, teacher qualifications, and general academic level based on the school's Certificate of Primary Education (CPE) levels. This broad outline guided early decisions in school selection and helped shape the sociolinguistics survey which in turn helped to refine the

research plan. The final research design will be incorporated in the detailed implementation plan, November 1981.

F. Tentatively Select Schools

The general principles for tentative school selection were to select as broad a sample as possible within the budget constraints of the project and to incorporate some divergent cultural groups in order to test effectiveness of radio instruction in this sample.

On the basis of the research plan, the project team wanted to define a sample of schools which would represent the country as a whole as closely as possible. Using 20 as the minimum number of pilot schools, we then looked for the best method to insure representativeness. It was decided that the best representation would be from the greatest numbers from the various linguistic groups. By selecting eight of the major language groups we would cover approximately 90 percent of the population. This selection did not include some of the more culturally divergent groups, however. In addition, it gave us either a group of 16 schools--2 per district--or 24 schools--3 per district--in the former case too few schools, in the latter too many to manage.

These constraints dictated further restructuring of the sample. The final selection included seven districts: 1) five districts representing major linguistic groups, approximately 70 percent of the population of the country, 2) one coastal district of Swahili-speaking Muslims, and 3) one district of Masaai speakers. It was important to include the Swahili sample since Swahili is the designated national language. The Masaai language represents a different language family from others in the sample and a clearly different cultural group of largely nomadic peoples.

These decisions were based on extensive discussions prior to the field team's arrival in Kenya and subsequent first-hand discussions with educational authorities. Discussions were held with the two subcontractors--the Institute for Mathematics Studies in the Social Sciences concerning the overall research and evaluation, and the Center for Applied Linguistics concerning the sociolinguistics survey and overall evaluation. The Kenyan team members' experience with the educational system coupled with school visits and pilot lesson segment trials further strengthened confidence in the selection procedures. Discussions with District Basic Education Officers and other educators in the field also confirmed the method of school selection. During the preliminary visit of the sociolinguistics survey team in November 1980, final decisions on tentative selection were made and the sociolinguistics methods for conducting the survey were determined.

A list of the schools within each of the selected districts was obtained from the Central Bureau of Statistics which also randomly selected ten schools from each district to give a total of 70 possible project schools. The sample was narrowed from ten to six in each district based on the following school characteristics: accessibility, proximity to potential observer/evaluators, school facilities, willingness of headmasters and teachers to participate, and radio reception. In addition, the six schools in each district represented a range of academic performance on the Certificate of Primary Education exam; two schools achieved high CPE scores, two middle-range scores, two lower

scores. The sociolinguistics team conducted its survey using these 42 schools.

G. Conduct Sociolinguistics Survey

The sociolinguistics survey was conducted by the Center for Applied Linguistics. The field survey was carried out in January and February 1981 by two team members, Deborah Fallows and James Dias, under the direction of G. Richard Tucker, the director of CAL. During the survey team's preliminary trip to Kenya, they worked closely with the project team in determining the kind of information necessary to select the most representative schools.

The survey was intended to provide sociolinguistic and cultural data from randomly selected schools from the predetermined districts. This data aided the team in final school selection and provided anecdotal information about the school and community environment. Preliminary data were provided by the survey team in March and a draft report was provided in April. The final sociolinguistics survey is appended to this report.

H. Select Final Schools

The schools finally selected for the project were confirmed by the sociolinguistics survey. Twenty-one project schools were selected for summative evaluation purposes. The remaining 21 matched schools were intended as control schools. Modifications in the research plan resulted in dropping these as the control schools but some were retained as observation schools. This is described in full in the detailed implementation plan.

Some modifications in the list of project schools were necessary on the basis of further first hand experience. The major modification was the rejection of the surveyed schools in the Kwale district since they were not Swahili speaking. We had specifically asked for Swahili-speaking schools in the sample. Swahili-speaking schools were tentatively identified in the Kilifi district, and Philip Sedlak, sociolinguist and project team member, surveyed these schools using the sociolinguistics survey methodologies.

Substitutions for three additional schools had to be found for different reasons. Further, first-hand study of all the schools selected revealed that the three schools were unsuitable as project schools because of irregular school schedules and inaccessibility. Again using the sociolinguistics methodology, substitutes were identified and surveyed by Sedlak.

Throughout the entire school-selection process, the Kenyan education authorities were most cooperative. The DBEOs were receptive and helpful to the project team and the sociolinguistics survey team on every occasion. The personnel in the Central Bureau of Statistics and in the Planning Office of the MOBE provided information promptly and in a clearly understandable format. In cases where additional information was needed, they willingly provided it.

I. Try Out Lesson Format and Production

Beginning in January, the team began to try out lesson format and production capabilities. The team faced a great challenge in developing

lessons which used few mother-tongue instructions or explanations and very limited English vocabulary with the simplest linguistic patterns. This led to the early trial of sound dramas, animal characters, songs, rhymes, counting games, body-movement games, simple action commands, and so on. Several trials were made to determine rural children's recognition and responses to these activities.

Language instruction segments were also tried out. Aiming at a standard two student, the team prepared some teaching segments to practice the sequence of pre-test, instruct, and post-test. These trials included the entire team in order and familiarized all the team members with the complete sequence of lesson trials. They were aided a great deal during January and February by two consultants, Jamesine Friend and Ivan Propst. Friend detailed steps necessary to produce radio lessons and gave substantial advice on formative evaluation, teaching materials, and script writing. Propst worked on curriculum content and informal classroom testing strategies.

By May the team had experienced the process of identifying a teaching point from the curriculum, developing and administering a pre-test on the teaching point, writing and producing a radio lesson, trying the recorded lesson in the classroom, observing students during the lesson, administering a post-test, and analyzing the results. The team tried out both short lesson segments and longer series of lessons. As a result of this experience and the work with another consultant in educational broadcasting, Esta de Fossard, the team made much progress in lesson design and format. De Fossard suggested a format of several segments which introduced new material, maintained previously introduced material, provided entertainment, informally practiced material through games, songs, stories, and so on. Lesson segments, many of which are to be repeated several times throughout a lesson or a series of lessons, are somewhat interchangeable and can be reused when formative feedback suggests the pupils have not mastered a particular item.

During this visit, the production staff also experienced the possibility of streamlining production by doing a complete, live production with minimal post-editing. This is necessary if the production team is to keep pace with the daily lessons required.

Production facilities proved less than ideal. The KIE studios to be housed in the new Educational Media Services building will not be ready until late 1982. The VOK studio assigned to KIE is overworked and inadequate, particularly for this kind of production. It was necessary then to supplement the studio equipment to a greater degree than we had planned. Additional professional quality recording equipment, sound effects records, microphones, and so forth were required. This procurement was often slow as equipment recommended by the KIE engineer was often not available in the U.S., waivers and Contracts Office approval were required, air shipments were delayed, and customs clearance was cumbersome and time consuming.

Script and test production, not yet in full production, have also been more difficult than expected. Reproduction equipment at KIE cannot handle the project load adequately. Typing and duplication, therefore, required the addition of an extra clerk-typist, extra typewriters, and a small xerox machine. This, of course, adds to an already strained budget.

J. Develop a Scheme of Work

The radio curriculum is the Kenyan primary curriculum for the first three years of English instruction specifically rewritten to use radio as the medium of instruction. We use the term "Scheme of Work" (Scheme) since it guides the work of the lesson development and writing, and to avoid the term curriculum or curriculum guide since we are not producing a separate curriculum. The Scheme outlines 1) what pupils need to learn, including for what purpose or what occasion, 2) where they should learn it, in what order, at what pace, 3) how it should be taught maximizing radio, and 4) how it can be tested.

The content of the Scheme comes directly from the Kenyan curriculum as exemplified by Progressive Peak, the English textbook series for the primary level. The development of the Scheme, therefore, began with a complete linguistic analysis of the Peak materials and, concurrently, classroom observations and tests to determine the extent to which the Peak materials were being learned. A pilot post-test was administered in November to get a rough estimate of mastery of standard one materials in selected schools.

The sequencing and pace of the materials was outlined by the project team and two curriculum consultants in several successive attempts. The major constraint here was the radio medium and the necessity of a slow, simple first stage as pupils gained familiarity with the radio medium. The lesson format trials gave valuable feedback about pacing, and experience in lesson development suggested continuous modification of the sequencing.

Again the radio medium, combined with what seems the best current thinking about language-teaching methodology, dictated the principles on which specific lesson or lesson segment methodology is being developed. The linguistic structures, both oral and reading elements, are the building blocks of the curriculum. The specific skill objectives detail the pupil behaviors expected in using the linguistic materials in a particular situation. The methodology goes beyond this to define the manner in which the linguistic material is conveyed to the pupil, how the pupil is to respond, and how the pupil is to practice most effectively and efficiently through the radio medium. This process is again developing through experience. First, a method is predicted, based on previous but limited experience. Where appropriate, the Radio Mathematics methodology is adapted as the first step. The script writers make further suggestions. Lessons are tried out with the children, and the methodology is evaluated. The further development of the radio methodology is one of the main benefits of the formative evaluation process.

There are no formal, standardized tests administered for English language arts during the first three years in the Kenyan school system. A testing procedure for insuring pupil achievement and mastery of the objectives is also being developed. In addition to the post-tests to measure achievement at the end of a school year for summative evaluation purposes, short, simple tests to be administered to groups of pupils on a weekly basis are also necessary. The team is attempting to make these as non-threatening as possible, and to develop instruments which provide hard data to be used along with the observer's comments.

The final shape of the Scheme has not been established. The successive stages of development are bringing it closer to a completed document which must be available during the script writing and lesson production period in November and December 1981. The final lesson trials in October will provide the field experience to suggest final modifications in the Scheme.

In many ways, the development of the Scheme has been the most difficult aspect of the project. Although the content is specified by the Kenyan curriculum, there are no models of a primary language arts radio curriculum. That is what the whole project is about. And yet, before this can be realized in actual radio broadcasts and its effectiveness evaluated, the entire curriculum must be thought through and outlined in sufficient detail that writers and producers can follow the outline.

The urgency of all the previously described activities during the year frequently got in the way of curriculum development. Curriculum decisions are often matters of interpretation and judgement and are sometimes emotionally charged. Every curriculum decision had to be carefully weighed by the team to insure that it could be convincingly demonstrated that the Scheme and radio lessons are in fact responsive to the needs of Kenyan pupils.

K. Develop Testing Instruments and an Observation Scheme

Throughout the year, the team wrote and tried out tests in conjunction with instructional radio lessons. The tests were invaluable in providing experience in test development and administration. The most significant test development occurred in late August and September when Grant Henning, language testing and evaluation specialist from the American University in Cairo, worked with the team on developing a post-test for standard one. The test development was in two stages. First, a mini-post-test was developed and piloted. On the basis of this experience, a 140-item test was piloted in September. Henning then analyzed the test results and made recommendations to the team for choosing the best items for the post-test to be administered at the end of the school year in November. The test will be in four parts: two for listening comprehension, one for reading, and a listening and reading test. The test will be administered by the observers. Directions will be given in the children's mother-tongues. In mixed-language classes, directions will be given in Swahili, the language of instruction in such cases. The listening-comprehension portions of the test will be given by the examiner. More details on the post-test development and analysis may be found in Henning's report appended.

The post-test is, of course, based on the Kenyan curriculum. The content is not very different from any beginning English course for children, except for its obvious reference to the Kenyan environment and culture. The major objective of aural comprehension and the minor objective of simple reading for first-year pupils is also consistent with many language programs. The post-tests developed and validated for the project may serve as model instruments for primary student English assessment in many situations.

The observers/evaluators referred to above have major responsibility in the formative evaluation. Under the direction of the feedback coordinator, the observers will make regular classroom observations of radio lessons and submit their reports to the team. The observers will work in the ten observa-

tion schools in the seven districts. Twenty observers have been selected and given preliminary training at KIE. Another training session will be held in early November prior to administration of the post-test.

The primary role of the observers will be to 1) observe the classroom using observation sheets, rating scales, and provide detailed anecdotal notes of actual events as they occur in the classroom, 2) administer formative and summative tests, and 3) conduct interviews with teachers and children.

All observers are experienced primary-school teachers--at least five years--and have been recruited from the Teacher Advisory Centers (TACs) in each educational district. Their roles at the TACs are to provide inservice training to teachers which gives them regular access to schools and teachers in the district and is congruent with their project roles. (More details of the observation scheme may be found in the detailed implementation plan.)

L. Develop Detailed Implementation Plan

The development of the detailed implementation plan was originally scheduled for completion six months after the field team's arrival. Delays in selecting Kenyan staff members and in securing permanent office facilities suggested an alternate date. Additionally, the sociolinguistics survey had to be delayed until the project agreement was signed. The survey work began shortly after the field team arrive in Nairobi but several months after the original schedule.

The implementation plan is to be a cooperatively developed plan between Kenyan and American participants. Within the limits of the AED contract with AID and the project agreement between USAID and the Government of Kenya, the detailed plan depends on the several complex inputs outlined in the above report. In recognition of the complex nature of developing the plans, and the sensitivity required to insure adequate Kenyan participation, the final plan was delayed until November 1981. This should allow resolution of major questions concerning curriculum, evaluation, and logistics. Included in the implementation plan will be the research design for the project, the components of which have been briefly described throughout this report.

The development of the implementation plan clarified earlier concerns project timing and resources. The current project contract calls for the completion of tasks by the end of the fifth year of the project, September 25, 1984. The arrival of the field team in Kenya in late 1980 meant that school broadcasts could not begin until 1982. In order to complete three years of broadcasts, probably the minimum required to demonstrate effectiveness of the instructional program, the broadcasts would have to run through December 1984. Summative evaluation would have to take place, for the most part, after that. Major dissemination activities would have to occur still later.

Project activities, partly due to the location of the project, are more costly than anticipated. The existing budget falls short of the resources needed to complete the full scope of work. Modification of the scope of work and/or the budget is considered a priority topic of discussion in early 1982.

IV. SUMMARY

The team has been able to meet the regular and unexpected challenges of the project so far. With the aid of a series of highly effective consultants and frequent interaction with the project director and AID project monitors, critical situations have been met with efficiency and diplomacy.

The job is larger than anyone anticipated. Additional staff, equipment, and time have been necessary to meet the demands of the project. All of the visiting consultants to the project have indicated that the project is understaffed.

The project is entering its most critical phase. The ability to prepare the necessary six to eight weeks of lessons prior to January 1982 broadcasting will be severely tested in November and December, at the same time the team is sorting out evaluation and logistical problems. The initial broadcasts will also be critical. The response from teachers, parents, headmasters, and children to these early broadcasts will determine community and national acceptance of the project.

V. UNRESOLVED PROBLEMS

The following section summarizes a series of outstanding issues:

- A. The lack of adequate compensation, e.g., inadequate housing allowance to enable out-of-town candidates to relocate to Nairobi, resulted in recruitment delays of Kenyan professional staff and an unexpected addition to the budget.
- B. Inadequate technical facilities and equipment caused operational delays. The decision to purchase from project funds additional equipment, e.g., a photocopier, further strained the budget and added to time delays.
- C. Host country personnel costs and local services are higher than anticipated. Skilled support staff salaries are higher than expected. Inadequate determination of support staff needs, e.g., secretarial help, necessitated hiring additional support staff and also changing the project budget.
- D. The complicated natures of the tasks, e.g., developing a methodology for teaching English as a second language in the first three grades where none existed before, required considerably more time than anticipated. The variety of the tasks and the complexity of the research design has resulted in delays in meeting preliminary schedules.
- E. Experience has shown that the entire professional staff is overworked considering the rigid schedule necessary for producing good radio programs on time.
 1. The field coordinator has a dual role of administrator and technical specialist. It is clearly more than one person should be asked to do.

2. The project director has been forced to devote more time to providing technical inputs to the project than originally foreseen, resulting in delays in providing AID with required reports and necessitating more field time in Kenya. This adds to the already strained budget.
 3. There are no "backups" for the U.S. and Kenyan field staff. If one member of the team is lost, serious operational problems will result.
- F. Project start-up delays, not the fault of the contractor, cast doubt that the original project time table will be adequate to meet all project objectives.
 - G. KIE has been encouraged to initiate and/or support activities to gain wider Kenyan support for the project. The delicate political situation, e.g., charges that Kenyan children are "guinea pigs in a secret U.S. research project," requires positive support from various Kenyan entities. The first step should be the creation of an advisory committee made up of knowledgeable and influential Kenyans who could understand, advise, and speak for the project.

VI. MAJOR ACTIVITIES FOR YEAR THREE (1981-82)

- A. Develop 195 radio lessons for standard one. November 1981 - November 1982.
- B. Develop a Teachers' Manual, daily teachers' guides, and pupil worksheets to accompany radio lessons. November 1981 - October 1982.
- C. Administer standard one post-test in control schools. November 1981.
- D. Analyze standard one post-test results. January 1982.
- E. Orient and train observers who will aid in post-test administration and formative evaluation. November 1981.
- F. Orient headmasters and teachers in project schools. December 1981.
- G. Collect additional data on schools, teachers, pupils. November 1981 - March 1982.
- H. Conduct formative evaluation on a weekly basis for approximately 36 weeks. January - November 1982.
- I. Develop and present detailed budget review in relation to Scope of Work. January - February 1982.
- J. Develop Scheme of Work for standard two. February - June 1982.
- K. Develop post-test for standard two. June - October 1982.

VII. BUDGET

CONTRACT NUMBER AID/DSPE-C-0051

<u>Category</u>	<u>Project Budget</u>	<u>Expenditures to September 30, 1981</u>
Salaries and Wages	\$ 1,147,851.00	\$ 278,241.14
Employee Benefits	252,528.00	66,566.46
Consultant Fees	33,686.00	13,038.00
Travel and Transportation	297,808.00	187,409.66
Other Direct Costs	299,900.00	122,679.20
Indirect Costs (28%)	446,991.00	178,172.02
Overseas Allowance	176,935.00	55,377.79
Subcontracts	548,610.00	114,793.93
Equipment	<u>66,353.00</u>	<u>45,241.53</u>
Total	\$ <u>3,270,662.00</u>	\$ <u>1,061,519.73</u>

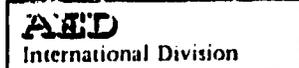
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APPENDIX A

A SOCIOLINGUISTIC SURVEY OF
SELECTED KENYAN COMMUNITIES
JUNE 30, 1981

Deborah Z. Fallows, Team Leader
CENTER FOR APPLIED LINGUISTICS

Academy for
Educational
Development



RADIO LANGUAGE
ARTS PROJECT
- KENYA -

A SOCIOLINGUISTIC SURVEY OF
SELECTED KENYAN COMMUNITIES

June 30, 1981

by

Deborah Z. Fallows, Team Leader

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This paper was prepared by the Center for Applied Linguistics for the Academy for Educational Development under Contract No. AID/DSPE-C-0051, Extension of Rural Primary Schools (Radio Language Arts), with the U.S. Agency for International Development.

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Questions about the results of the survey or the raw data should be addressed to: Dr. Maurice Imhoof, Project Director, Radio Language Arts Project, Academy for Educational Development, 1414 22nd Street, N.W. Washington, D.C. 20037-1099.

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PREFACE

The Office of Education, Bureau of Science and Technology (formerly the Development Support Bureau), United States Agency for International Development, has contracted with the Academy for Educational Development to develop an innovative radio-based English language arts instructional program in collaboration with the Ministry of Basic Education in Kenya, where English is used as a medium of instruction. The project will design, implement and evaluate an instructional system to teach beginning English language skills in the first three primary grades of Kenyan schools using radio as the major medium.

Based on the Kenyan national curriculum, the radio lessons, broadcast daily during the school year into representative primary classrooms, will take into account the linguistic and cultural diversity of Kenya's citizens. To this end, the Academy contracted with the Center for Applied Linguistics to conduct a sociolinguistics survey which would both aid in the final selection of pilot schools for the project and provide in-depth study of the linguistic communities making up those schools. Under the direction of G. Richard Tucker, a team from the Center, working in close cooperation with Kenyan educational authorities, and the Kenyan and American members of the project team, carried out their field work in January and February, 1981. Deborah Z. Fallows and James Dias made up the field team. Their report which follows was of immediate use to the project team in making a final selection of project schools and in guiding the work of the lesson planners and writers. For the general reader, it provides a current description of the interactive use of Swahili--the designated national language; English--an official language of the country and the medium of instruction in the schools after the fourth year; and the vernacular languages.

Members of the project are happy to share this and other information from the project and welcome suggestions and comments.

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I. Introductory Statement

The Center for Applied Linguistics (CAL) was asked by the Academy for Educational Development to undertake a focused cultural and socio-linguistic survey of Kenya. This survey was to be undertaken in conjunction with the Academy for Educational Development (AED) simultaneously with the launching by AED of the Radio Language Arts Project. It was thought to be important to collect base-line information concerning language use and language attitudes from a sample of respondents similar to those who would ultimately be affected by the implementation of this project.

CAL has had extensive experience in coordinating or implementing field surveys of this type; and, in fact, coordinated the survey of language use and language teaching in East Africa in which Kenya was one of the five countries surveyed. CAL asked two linguists to assume primary responsibility for this task. Dr. Deborah Z. Fallows served as Team Leader for the project assisted by Mr. James Dias. Consultative input was also received from Dr. Carol Myers Scotton, a Professor at Michigan State University, who has had extensive field experience in Kenya; Dr. William Gage, a CAL linguist who is particularly interested in the language situation in East Africa; and Mr. Len Shaefer, Assistant Director of the Language Processing Center at Georgetown University.

The actual field work which led to the preparation of this report resulted from an initial reconnoitering trip by Fallows and Dias to Kenya in November 1980 followed by the actual field work itself which occurred during a seven-week period in early 1981. The purpose of the reconnoitering trip was to meet key individuals who would assist the Survey Team in various ways during their stay in Kenya, to identify potential areas of the country in which survey work could be carried out, and to obtain a better feel for the scope of work and, thus, the nature of information that should be collected during such a survey. During the field work, excellent support was received at all stages from the AED home office in Washington and project staff in Nairobi. In addition, individuals from the Kenya Institute of Education, (KIE), the Central Bureau of Statistics and other education officials provided valuable assistance.

II. Purpose of Field Survey

The Field Survey was predicated on the assumption that patterns of language use and language attitudes constitute an important component in the implementation of language teaching programs. In recent years, it has become common to carry out base-line sociolinguistic surveys before undertaking major language education innovation. The notion is that a thorough knowledge of the functional allocation of languages and their ascribed status will help one to understand better some of the major social forces at work that can affect program implementation. In general, such survey work has both short-term and longer-term utility. The results of field surveys can provide important guidance concerning selection of program sites, and the content of structuring of program materials. They can, as well, provide a solid backdrop of demographic and other language use and attitude information for the description of project participants, their teachers, their schools and their communities at the beginning of the language education innovation and for comparative purposes at specified intervals following such information.

As originally envisaged, the present Field Survey has three major purposes: (1) the collection of general information from diverse individuals concerning their patterns and practices with regard to language use and language attitude; (2) the collection of information from individuals about previous experiences with radio as a vehicle for formal instructional purposes; (3) the collection of anecdotal and other supplemental information concerning school and community environment, school facilities, and receptivity of headmasters, parents, and teachers.

With respect to the first purpose--the collection of information from teachers, students and parents in diverse sections of the country concerning their patterns and practices with regard to language use and language attitude as well as more detailed information about their need for uses of English--it was hoped that this information would provide base-line or entry-level data which would permit the accurate description of prospective participants in the radio language arts project. Such information is desirable so that statements can be made about the likely generalizability of the results of the radio language arts project to children other than those in the experimental project schools. In addition,

this information will serve as base-line data for the first phase of the longitudinal summative evaluation that will be carried out during the course of the project implementation to assess the relative efficacy of providing English language arts instruction for selected pupils via radio in comparison to that which is traditionally provided pupils by their classroom teachers in comparable control schools.

Finally, with respect to the second and third purposes, very practical information was sought for AED program staff. It was thought that specific information about prior experiences with radio instruction and reactions to it would affect the design of the proposed series. In addition, the CAL team sought to provide information about those types of myths, beliefs, attitudes or traditions that might serve as the "vehicle" for conveying language to pupils for the purpose of assisting AED project personnel in preparing scripts for the radio programs.

III. Strategy for Sociolinguistic Survey

The sociolinguistic survey was conducted by interviewing parents, teachers and students from 21 schools with respect to their patterns of language use and language attitudes toward English, Swahili and their mother tongue. The 21 schools from seven districts were chosen according to procedures described in the section of this report called "School Selection Procedures."

In each of the seven districts, the CAL interview team first contacted the District Education Officer, and often several of his staff, including the Assistant Education Officer, the officer responsible for primary schools, the school inspectors, and the members of the Teachers' Advisory Center (TAC). The survey team presented letters of introduction from Kenya Institute of Education and explained the project. In many instances the CAL team was preceded by visits from the KIE/AED teams, and the district officers were already well aware of the project. These officials were able to facilitate CAL's entry to the schools by contacting school principals in advance, or accompanying the CAL team to the school, or at the least, by providing letters of introduction to the school principals.

A CAL survey member arrived at a school, sometimes together with a district official, or a TAC member and often with a local contact to help in translation. (These had been trained by the CAL member to conduct interviews.) The survey team first met with the headmaster or the deputy

headmaster to describe the project and interview procedures. They sometimes had the opportunity to meet with the teachers and parents as a group as well. Interviews were conducted individually, one interviewer and one respondent, sometimes in the presence of a local translator, in an empty room or office, or a quiet place outside. Interviews took between 10 minutes (student questionnaires were the shortest) and 60 minutes (teacher questionnaires sometimes took this long). There was often time to spend afterwards talking with the teachers--on a walking tour of the school, at lunch, or just chatting. The interview team often had a chance to corroborate statistical information provided by the Central Bureau of Statistics (CBS) on each school (see statistical package) by such observation and informal discussion at the schools. It was possible to complete interviews at a given school in one or two days.

IV. School Selection Procedures

The Central Bureau of Statistics provided us with names of 10 randomly chosen schools in each of seven districts. For each school, they provided statistics of number of students, number and qualifications of teachers, CPE (Certificate in Primary Education--the school-leaving exam given at the end of elementary school) performance of standard seven (grade seven) students. On the basis of these statistics, we planned to choose three matched pairs of schools, a high (rank 1), a middle (rank 2), and a low (rank 3) pair. The rank 1 pair would have comparatively good teacher qualifications and good CPE performances, the rank 2 pair would have middle level qualifications and performance, and the rank 3 pair would have low level qualifications and performance.

In some districts, pairs could not be found. Either there were insufficient differences among schools to find three levels of schools, or there were insufficient similarities to make up pairs. In other cases, we had to eliminate some schools. Based upon discussions with the local district education officers, we found that some schools were unsuitable because they were inaccessible in rainy season, they had poor radio reception, they were too urban, or the population of the school was not representative of the district.

We then did one of two things. (1) If our time and location permitted, we requested additional names of schools and their accompanying statistics from CBS and then repeated the selection procedure. (2) We obtained a

complete list of schools in the district, ranked according to average CPE performance. We divided the list into thirds (rank 1, 2, or 3), based on average CPE scores. We eliminated certain schools on the recommendation of the local education administrators for the usual reasons (location, radio reception, etc.). We then randomly selected schools from the rank group 1, 2, or 3 that we needed to complete the selection of three pairs of schools.

V. Results of Sociolinguistic Survey

The first purpose of the sociolinguistic survey was to gather information on the use of and attitudes toward Swahili, English, and the vernaculars throughout Kenya. The discussion of these issues is presented in the following way.

First, in Part V, Section A, 1, there is a discussion of the overall proficiency of speakers in Swahili, English and the vernaculars around the country.

Next, it was found that patterns of language use broke down into the following categories: Languages of the home and community; Languages of the workplace; Language of the "official" world; and Languages of communication. These are discussed in Section A, 2-5.

Next, it was found that while these patterns of language use could be described for Kenya as a whole, there were some differences by district. These are discussed in Section A, 6.

All of the above information viewed from another perspective indicates that there are distinct profiles of the different languages of Kenya, Swahili, English and the vernaculars. Descriptions of this overall sense of each of these languages are found in Section B.

The second purpose of the survey was to examine the peoples' habits of radio listening and particularly, their experience in using radio for academic purposes. The discussion of these issues appears in Section C.

Additional questions were addressed to the teachers about their commitment to the profession, their teaching experience and their opinions on students' English skills, teaching materials, and radio use in the classroom. This was a minor part of the survey and was designed to be of interest to the team preparing materials, and possibly for evaluation purposes. The results are presented in Part VI.

Finally, it was possible to examine the survey results from Part V

with respect to two issues that were of prime importance in the school selection procedures: school rankings according to students' CPE performance, and geographical location. Part VII compares survey results from schools that were "high" performers or "low" performers according to the criterion of CPE performance. Part VIII examines survey results as a factor of the schools' location with respect to Nairobi, the "near" districts surrounding Nairobi or in the "far" districts along the eastern and western borders of country.

A. Language Use

English, Swahili, and many vernacular languages are spoken throughout Kenya. The data from the different people we interviewed illustrate some of the variations in extent of use of these three language types and degree of proficiency in them. In each of the 21 schools, which were selected to represent seven districts around Kenya, we interviewed three students from Standard 6 or 7, three parents of students in the school, and five teachers, one each from Standard 1, 2, 3, one English teacher from an upper standard and the headmaster or deputy headmaster. Information gathered on professions of the informants indicate that the parents represent the lower end of the socioeconomic spectrum (72% are in unskilled or semi-skilled jobs, such as farmers and laborers, or are unemployed) while teachers represent the higher end, along with other professions as nurses and secretaries.

1. Use and Proficiency of Languages

Only about half the parents spoke any English at all. About 35% gave themselves the highest ratings on proficiency, saying they spoke and understood English "very well" or "fairly well." Only 28% had studied English more than five years in school. Among the students, all spoke some English. Their proficiency varied widely; some were able to conduct the interviews easily while others had to do it by translation. About 90% of the students gave themselves highest proficiency ratings.

The teachers were obviously the best in English. But their proficiency varied as well. All were able to complete the questionnaires, but some had considerable difficulty with the more complicated questions. In these instances, the interviewer had to explain or paraphrase the question until he was sure the respondent clearly understood and was able to answer. 99% gave themselves the highest proficiency rating in English.

If the respondent was not skilled enough in English to both understand the questions and respond, then the interview was conducted in Swahili or vernacular. Vernacular was used if the interviewer, or the translator for the interviewer and the respondent shared a mother tongue. Otherwise, the interview was conducted in Swahili. For Swahili, we were able to make our own judgments only by observing the ease with which the Swahili-administered interview was conducted and the extent to which Swahili was used everywhere we went, with apparent facility. It is clear that most everyone is more comfortable with Swahili than English. The three groups, describe their own proficiency in Swahili this way: For parents, about two-thirds gave themselves the highest rating for speaking and understanding Swahili, "fairly well" or "very well." For students, almost 80% rated themselves this way and for teachers, almost 83%. Less than 3% of all respondents listed Swahili as their best language. Two-thirds of the parents listed Swahili as their second language, and one-third listed English as their third language. While more students listed English as their second language (53%) and Swahili as their third (52%), two-thirds of the teachers said English was their second best language and Swahili their third.

The vernaculars, of course, are spoken fluently all over the country. While everyone speaks it best of all his languages, many (about 30% of parents and 12% of teachers) do not read or write it. These figures for language use and fluency were not always consistent across districts (see Table 1). Kiambu and Kericho each had seven parents who spoke English; Machakos had five; Kajiado and Kakamega had four; Kwale had three and Kisumu had two. Kiambu also had more parents listing English as their second language, almost 90% did so in Kwale. Kiambu had the smallest number who called Swahili their second language. In Kajiado, Swahili predominated as the second language, and English as the third, but one-third spoke only vernacular.

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PARENTS' KNOWLEDGE OF NON-VERNACULAR LANGUAGES BY DISTRICT

TABLE 1

		Kiambu	Kajiado	Machakos	Kericho	Kakamega	Kisumu	Kwale	Total
Respondent Speaks English	No	1	6	4	2	4	7	6	30
	Yes	7	4	5	7	4	2	3	32
Respondent Speaks Swahili	No	0	3	1	0	1	1	0	6
	Yes	8	7	8	9	8	8	9	57
2nd Best Language	Eng.	4	1	1	3	3	1	0	13
	Swa.	4	5	7	6	6	6	8	42
	N/A	0	2	1	0	0	2	0	5
3rd Best Language	Eng.	3	3	4	4	1	1	2	18
	Swa.	4	1	1	3	1	1	0	12
	N/A	1	5	4	2	6	7	5	30

Abilities in Swahili varied as well: overall, about 36% of the parents said they spoke Swahili "very well", and 47% understood, 41% read, and 25% wrote Swahili "very well." The one district that varied noticeably from this was Kwale, where 100% reported that they spoke and understood Swahili "very well", 55% read and wrote it "very well." One said it was his best language. For the vernaculars, there is a sharp division in literacy rates among the districts: in Kajiado and Kwale, two-thirds of the parents said they could not read or write their own language "at all" or "not very well." In all the other districts, they answered "fairly well" or "very well."

There were differences among student responses also. (See Table 2) Overall about half the students listed English as their second language and Swahili as their third. In Kakamega, 7 of 9 listed English second and 9 listed Swahili third. In Kiambu, Machakos, Kisumu, and Kericho the ratios were about 2 to 1, listing English as second and Swahili as third. In Kajiado and Kwale, however, more than 75% listed Swahili as the second language and English as the third. Students from Kajiado and Kwale show great strength in Swahili in particular. In self-evaluations, they rated themselves as speaking, reading, understanding and writing consistently well above the norms. On the other hand, in Kiambu and Kisumu, students rated themselves consistently well below the norms for Swahili abilities.

While about 65% of students said they could read and write their vernacular "very well", responses were more positive in Kakamega, Kisumu and Kiambu, and more negative in Kajiado and Kwale. The teachers also showed a little variation by district. Most of the teachers rating their Swahili abilities as "not very well" were from Kisumu. Kericho and Kakamega had more teachers answer this way than the other districts.

The following sections will discuss the languages used in the different kinds of situations that make up life in Kenya: language of the home and community; language of the workplace, including schools; language of the "official" world; and language of mass communication.

2. Language of the Home and Community

The vernacular clearly dominates language use in the home and vernacular and Swahili are both used as languages of the community. Between 88-93% of the students said they speak a vernacular at home with parents,

STUDENTS' NON-VERNACULAR LANGUAGES BY DISTRICT

TABLE 2

	Kiambu	Kajiado	Machakos	Kericho	Kakamega	Kisumu	Kwale	Total	
2nd Best Language	Eng.	6	2	6	6	7	6	1	34
	Swa.	3	7	3	3	0	2	8	26
3rd Best Language	Eng.	3	7	3	3	0	3	8	27
	Swa.	7	2	6	5	9	3	1	33

siblings and other relatives. The rest is primarily Swahili, with a little English spoken with siblings. 80% of the parents said they speak vernacular "nearly all the time" at home, and again, Swahili makes up most of the rest. It is usually spoken with "visitors" who don't speak the same vernacular. Minimal English is spoken at home, only "when helping the children" or with "visitors."

The teachers' profile looks slightly different: only 56% say they use vernacular at home "nearly all the time" and they use more English and Swahili than the parents do. The explanation for this is that many teachers are living and teaching outside the regions where their vernacular is spoken. These teachers would have many more occasions to use Swahili. Many of the teachers were from Kwale, which has the highest percentage of teachers native to other areas. Large numbers of students assigned to teacher training colleges in the coastal regions are from "up country." Many stay on in the area, at least temporarily, to teach. In Kwale, 6 of 15 teachers were native Kidigo, while the rest were from a variety of other areas. The only other district that has a high percentage of non-native teachers is Kajiado, where 7 of 12 teachers were native Maasai. The rest were Kikuyu.

Sixty-seven percent of students, 65% of parents, and 67% of the teachers say they use the vernacular at church, with the clergyman. Nearly all the rest use Swahili. Many of the respondents who answered Swahili, said it was because their clergyman didn't speak their vernacular.

At the market, 54% of the parents, 65% of the students, and 43% of the teachers speak vernacular. The rest use Swahili. Many of the respondents said they really use both languages, and had a difficult time saying which they thought they used more. It depended, they said, on whom they were talking to at the market, whether or not the other person spoke their mother tongue. A "store" or "shop" brought slightly different responses about language use from use in the "market." For parents, 51% used vernacular, and 46% used Swahili. For students, 41% used vernacular against 48% for Swahili. For teachers, 28% use vernacular against 60% for Swahili. Among parents, this same pattern of roughly equal use of vernacular and Swahili -- slightly favoring vernacular -- was observed in five of

the seven districts: in Kwale and in Kericho, however, Swahili was used much more frequently than the mother tongue in community situations. The majority said the language they used at the market, in stores, and at church was Swahili. Among students, one-fourth to one-third of the students from Kwale said they usually speak Swahili at home with their families, although they still listed Kidigo as their first language. In community situations, students from Kwale and Kajiado consistently showed much more use of Swahili than the others.

Teachers also showed some variation. In Kiambu and Kisumu, 95% of the teachers used their vernacular at church, while in Kajiado and Kwale, they averaged about half as high for vernacular and twice as high for Swahili.

At the markets, vernacular was primarily used by teachers in Kiambu, Machakos, and Kisumu, while Swahili was primarily used in Kajiado, Kericho and exclusively used in Kwale. For shopping at stores, only in Kiambu did teachers continue to use a great deal more vernacular than Swahili.

Vernacular is clearly the language of the home. Vernacular and Swahili are both used as languages of the community; vernacular usually is favored in Kiambu, Machakos, Kisumu, Kakamega, and Swahili is favored in Kajiado, Kwale and Kericho.

3. Language of the Workplace

The parents in this study were described as being primarily semi-skilled, unskilled, or unemployed. This includes jobs like carpenter, laborer, farmer, driver, herder. Only 28% were described as having "skilled" or "professional" jobs. The parents represent a lower socioeconomic group than the teachers -- who are all described as "skilled." The parents said the primary language of their workplace was vernacular. More than 90% of them speak vernacular at work and 80% of them speak it there nearly all the time. For the rest, Swahili is spoken about twice as often as English. Most said they used their Swahili, "when someone didn't speak the vernacular." Eleven percent of the parents, presumably the professionals among them, said they spoke English "nearly all the time" at work. Many of the others who reported speaking some English at work commented that they used it "when someone was speaking English to them" or when "someone didn't speak Swahili."

Broken down by districts, in Kiambu and Kericho -- where parents had highest job ratings -- the majority said they spoke English at work and the majority of those said they spoke it "nearly all the time." In the other districts those who worked spoke vernacular all the time.

The language use of the teachers at school is much more mixed. Virtually all say they speak both English and Swahili at school; 75% say they also speak vernacular. (Those who don't speak vernacular are probably teachers who are teaching outside their home districts.) Forty percent say they use English "nearly all the time." Eleven percent say they speak Swahili and 32% say they speak vernacular "nearly all the time." In English class (standard 1, 2, 3 use English only in English class), teachers say they use English nearly all the time, except when providing clarifications. Then, they tend to use vernacular (42%) or Swahili (31%). There are a few differences by district. In Kiambu, 79% of the teachers clarify in vernacular while in Kwale, 67% clarify in Swahili. Outside the classroom, teachers say they speak English with the students about half the time, while the rest is split between Swahili and vernacular. (Many teachers explained that they usually use English with the older children and vernacular with the young ones whose English is not strong enough.) Seventy-three percent say they use English with other teachers, and 87% use English with the headmaster. In Kiambu, teachers talked to each other in vernacular more than twice the norm. In Kajiado and Kwale teachers conversed in Swahili, about 40% of the time, the only two districts where they spoke Swahili at all. Seventy percent of the teachers use vernacular when talking with the parents of their students, against about 30% for Swahili. Swahili was used in Kwale and Kajiado, where teachers were natives of other areas, and in Kericho, where the students came from a variety of tribal backgrounds.

Among the students, 97% say they usually speak English with the teacher in English class; 70% speak English with their classmates in class. When they ask for explanations in class, 61% say they ask in English, 23% in Swahili, 16% in vernacular. Outside the class 98% say they speak English with the headmaster, half the students say they speak English with their teachers, while the rest mostly speak vernacular. 80% say they speak vernacular with their friends outside class. By district, Kiambu students reported using about twice as much vernacular, both inside and

outside class, with teachers and classmates alike, than was the norm. In Kwale, on the other hand, students reported using much more English and less vernacular with their classmates outside of class, than any of the other districts.

4. Languages of the "Official" World

For the parents, Swahili is the language most often used "officially": 60% use it at the post office; 60% at the bank; 71% at the doctor, hospital or clinic; 80% at the police station; 46% at meetings. English is used twice as often as the vernacular at the post office and bank; equally at the doctor, but less at meetings. They write business letters 46% of the time in Swahili, versus 32% in English. Only in completing official forms, like drivers' licenses and birth certificates, do parents indicate they use more English than Swahili (49% versus 35%). Those who said they completed forms in Swahili often said they did it in Swahili and had someone translate it for them into English.

There is some variation among the districts in terms of the use of language for "official" purposes. In Kwale, Swahili is used almost exclusively even among those who speak English. In Kajiado, Machakos, Kakamega, and Kisumu, those who speak both English and Swahili were about evenly split -- half used English in these instances, and half used Swahili. In Kiambu and Kericho, the majority of those who speak English use English at the post office, bank and for official writing, but they use Swahili at the doctor and at the police station.

For teachers, the use of English and Swahili are mixed. Equal numbers use English and Swahili at the post office; 59% use English at the bank, against 17% using Swahili; 55% use English at the doctor, against 38% for Swahili; while 75% use Swahili at the police station, against 17% for English. At meetings (which for teachers usually means faculty meetings) half said they use English, a majority of the rest said they use Swahili. Teachers said they write business letters in English 88% of the time and complete official forms in English 98% of the time.

Of these official uses only the post office showed district differences: there was twice as much use of Swahili compared to English

in Kajiado, Kericho, Kakamega and Kwale, while three to five times as much English as Swahili was reported in Machakos and Kisumu.

For students, about half report using Swahili with the doctor or nurse although the usage by district varies quite a lot: Kiambu reports 70% use of vernacular, Machakos 55%. Kajiado and Kericho report 77% use of Swahili, 55% for Kakamega and Kwale. Kisumu reports two-thirds use of English. Thus, there is no consensus across districts concerning which language to use in this situation.

5. Language of Communication

Among parents, the majority of those who write personal letters, notes and messages do so in their mother tongue. They listen to the radio mostly in Swahili; although they listen to some leisure programs that are available in vernacular. Between 20-30% of the parents did not read, but among those who did, they read newspapers in both English and Swahili; they read books both in English and vernacular, and read magazines in English and Swahili. (If any book is available in vernacular, it will usually be the Bible. Availability of other translations, or original texts in vernacular varies greatly around the country.) Four districts follow these norms, but Kwale uses almost exclusively Swahili in these instances. In Kiambu and Kericho, parents use more English for writing and reading.

Students listen to the radio about twice as often in Swahili as in English, except for educational programs, which are always in English.

The teachers say they do almost all their written correspondence in English, even the notes to themselves. 75% listen to the radio more than 20 hours a week; they listen to the radio for news and pleasure twice as often in Swahili as in English. And of course, their educational programs are also entirely in English. For teachers, in Kwale and Kajiado there is two to three times as much personal writing done in Swahili as in English. In Machakos, on the other hand, 10 of 16 teachers said they usually write notes and messages in vernacular.

6. Summary of Language Use Differences by District

There are a few trends that seem to stand out. In Kwale, Swahili is more heavily used than in any other district. More people speak it more

often, and better. Swahili often replaces vernacular for community and even home use, and at work and in school. Swahili often replaces English as a choice for official uses as well. There are a number of reasons that may be responsible for this expanded use of Swahili in Kwale, and probably, in the whole coastal region: Swahili is closer, structurally, to the coastal Bantu languages than it is to the other languages in Kenya and thus, is easier to learn; the use of Swahili in Kenya originated in these coastal areas; there are large populations of different tribes living in close proximity -- encouraging use of a common language, Swahili, a situation found also in densely, and diversely populated urban areas.

In Kajiado, Swahili and English are split as choices for official uses. Swahili is often used in community situations instead of vernacular among teachers and students, but not among parents -- many of whom knew only the vernacular, Maasai. There is a strong literary tradition of Maasai, and it is clearly the language of the home.

In Kiambu, two trends are pulling against Swahili: English is favored for national and official uses, probably because of the great numbers of educated, English-speaking parents, while vernacular is favored for community situations, probably because of the existence of a homogeneous, large tribal group. Students in Kiambu appear strong in vernacular, and less strong in Swahili, comparatively.

Kericho tends to favor Swahili over vernacular for community situations and favor English over Swahili for official and national uses. This, again, is like the situation in Kiambu, where educated and occupationally-skilled parents, with better English abilities display preferences for English over Swahili.

In Kismumu, the language situation looks like Kiambu, except the parents are not as skilled at English, and thus are divided between Swahili and English for the official and national uses for language. Vernacular is very strong for community and home uses, taking away from use of Swahili. Also, like in Kiambu, students appear comparatively weak in Swahili and strong in vernacular.

The patterns are not as clear in Kakamega and Machakos, although they seem to be a less distinct version of what is found in Kisumu:

English and Swahili are shared as the official languages; vernacular is usually used as the language of the home and community.

B. Characteristics of the Languages of Kenya

There seems to be a general operating rule for language use in Kenya: use the vernacular whenever possible; use Swahili as a second choice; use English when you are obliged to and in special situations. This is both an impression we got from our observations and a conclusion we drew from our statistics. It is meant to be a general statement, and needs to be qualified in many instances. Language choice can vary depending on the details of the people who are talking, the place where they're talking, what they're talking about, etc.

Besides these circumstances of a conversation, there are several other factors that affect language choice. One is a person's facility in using each language. Obviously, people are most comfortable with their mother tongue. Although, as seen below, there are special situations where a person could be more comfortable using a different language. In Kenya, virtually everyone listed the vernacular as his best language. Two-thirds of the teachers interviewed listed English as their second best language and two-thirds listed Swahili as their third best language. Students -- who don't know English as well as teachers -- followed this pattern, but percentages were lower: 53% called English their second best language (versus 41% for Swahili) and 52% called Swahili their third best language (versus 42% for English). Only about half of the parents interviewed spoke English at all. For all parents, two-thirds listed Swahili as their second language (versus 20% for English) and 28% listed English as their third language.

Other external forces affect language choice. Although a person may be fluent in a language, he may not read or write that language. Such is often the case with vernacular in Kenya. In many native tribal languages in Kenya, the Bible is the only thing to read, and often there is nothing written at all. The educational system certainly affects language choice: since people begin as children doing nearly all their intellectual work in English, it is not surprising that they go on to use English for most reading and writing -- even writing notes to themselves, or their spouses

or their friends. And, there are certain circumstances where there is no choice about which language to use: e.g., in Kenya, official documents are usually written in English. Those who don't know English must use a translator.

There are other factors that go into determining the patterns of language use that are within a person's control -- either consciously or subconsciously -- e.g. preference for one language or another; a sense of appropriateness of language choice when speaking to a certain person, or in a certain situation; the "prestige" associated with a language, etc.

There is a definite profile for each of the three languages of Kenya: Swahili, English, and the vernaculars.

Swahili

Swahili is spoken by almost everyone in Kenya. In our survey, 90% of parents; 99% of teachers; and 91% of students listed Swahili as one of the languages they knew. Most parents listed Swahili as their second language, more teachers and students listed English as their second language, and Swahili as their third. This is a sensitive issue: we think there is a likelihood that teachers and students may have answered this way because they thought it was what we wanted to hear, or what they thought they "should" answer, or what they would like to be the case. Our observations contradicted the statistics: For example, the teachers and students said they always used English with the headmaster; but first-hand experience at the schools told us that in reality, this was not at all so. In at least two schools, just after having conducted interviews where teachers said they always spoke English with the headmaster, and the headmaster said he always spoke English with the teachers, we were treated to a lunch in the company of the headmaster and teachers where no English was spoken. It seemed even more dramatic considering that we didn't speak Swahili, and couldn't take part in the conversation. When we initiated conversation in English, they responded, of course, in English, but any talk among themselves was never in English. Banking was another such instance. 80% of teachers and 25% of parents replied they did their banking in English. In our experience and casual observation, it was our impression that Swahili is usually the language of banking transactions.

This survey itself presented another case. In several instances when the respondents listed English as their "second-best" language and Swahili as the "third best," we had to conduct the survey in Swahili because the respondent's English was too poor.

All parents say they want their children to learn Swahili. They usually give one of two reasons: (1) they say it is the "national language" or the "language of Kenya." People talked about Swahili with a great sense of patriotism. And accordingly, about 85% of parents said they thought Swahili should be the "language of Parliament." (Figures were higher in Kwale and Kajiado, lower in Kisumu and Kiambu.) Much of this is probably affected by a person's ability to communicate in English and Swahili -- many parents would be effectively shut out of this "nationalism" if English were used. Among the teachers, on the other hand, who speak more and better English as a group than the parents, about 55% agreed on Swahili, while 45% said English should be the language of Parliament.

The second reason is one of practicality: parents said that Swahili is the "language of communication" among the tribes. To function in the mixed-language society of Kenya, people must know Swahili. Again, about 85% of the parent respondents said they thought Swahili should be the "language of traffic signs" and "language used on billboards and advertisements." (Again, figures were higher for Kwale, lower for Kiambu.) This means they clearly see it as the language of communication within Kenya. The 15% who thought English should be used in these cases usually said it would help the tourists to have English. Of teachers, 63% said Swahili and about 37% said English should be used.

English

There is quite a different sense of English. Again, all parents want their children to learn English, but the most frequently listed reasons are "to get a job" and "education." People talked about English with much more of a sense of obligation -- you have to learn English if you want to succeed; you have to learn English to function at a certain level of society; you have to know some English to carry out certain official obligations. We sensed no emotional attachment to English the way we sensed it with Swahili or the vernacular.

English is also the language of the written word. The academic training in English is certainly responsible for teachers saying they usually write (even the most informal kind of writing) letters (84%), notes (77%) and messages even to themselves (93%) in English. So, for teachers, even if they are communicating with family, friends, etc. who speak their language, and even if they are communicating about the most informal things, they usually use English, probably a reflection of a strong literary training in English. The case is more complicated for parents. Roughly half the parents who know English said they write these informal notes, etc. in English. Overall, more people wrote in vernacular, and fewer in Swahili.

The pattern is remarkably different for Kericho and Kiambu where parents had higher occupational rating levels and where parents who could write in English did so almost all the time. Presumably, the difference is that overall, the parent respondents know English much less well than the teachers. This was certainly our observation. We did not examine the frequency with which parents and teacher respondents actually did this kind of writing, but it was our guess that the teachers did a lot more of it than parents.

Written English, then, operates under a different set of social rules than spoken language. Educational background and training override the usual set of rules for choosing a language. The better you know English, the more likely you will be to write in English -- even in circumstances where, were you speaking, you would speak in vernacular.

The same kind of pattern seems to be true for reading. For teachers, they do virtually all their reading in English (97-99%). It is interesting to note that 97% said they read newspapers in English, while only 37% said they listen to the news on the radio in English.

Again, for parents the case was more complicated. We believe the statistics disguise the real breakdown of reading habits because of the gross differences in English language abilities among the parents and also because of the availability of reading matter in the different languages: for many -- the parents whose English is minimal or nil -- the only book they read is the Bible, which is usually in vernacular. These same people will read newspapers and sometimes magazines in Swahili. Other parents, the ones who speak better English, read books in English, and read magazines and newspapers in both Swahili and English. Again, it is interesting to note that while 40% said they read newspapers in English, only 10% listen

to the radio news in English. There are no dramatic regional differences for this, except in Kwale, where all reading is done in Swahili and in Kiambu and Kericho, where about 85% of those who read do so in English. For students, there were no regional differences in their English self-evaluations. But when they were asked to compare their own English to that of their classmates, students in Kericho, Kakamega, and Kisumu rated their own English as "worse" than that of their classmates. In other districts, they rated it as "about the same" or "better."

For students, about 87% listed their occupational goals as "skilled" or "professional" positions, and 81% of them said the language they would need most in their future ideal jobs was English.

Thus, as for writing, the better you know English, the more likely you will be to read in English even in circumstances where, were you listening, you would be listening in Swahili or vernacular.

Vernacular

This was described strictly in terms of home and community. It is the language of everyday life. When possible (that is, when you know that people you are dealing with speak your mother tongue) you use vernacular -- in the market, in shops, at church, at the clinic, with teachers, etc. The statistics do not, we believe, reveal the extent of this. People often said they used Swahili in such cases. The reason is that there are so many areas throughout Kenya where people know they will have to use Swahili because they don't share a mother tongue, that many people said they used Swahili instead of vernacular. But such answers were nearly always qualified, at some point, by the respondent saying that he didn't use vernacular in such and such a case "because the minister didn't speak our vernacular" or the "teacher of my children is from another region" or "the shopkeeper is Asian and doesn't speak vernacular" or "traders in the market come from all over." They would use vernacular, they indicated, if it were possible.

The teachers present the most interesting case of this, as they are the one group who often find themselves living outside their vernacular region. As was seen, in Kajiado and Kwale, where you find this

situation, the use of vernacular is often impossible and teachers resort to Swahili for many home and community situations. For parents, the language of the home and community is the vernacular. By district, Kwale and Kericho show much more Swahili use in the community situations. All the regions looked similar in their language use patterns at home. For students, while the vernacular clearly follows this pattern, it finds competition to some degree from Swahili in Kajiado and particularly in Kwale.

Just as Swahili is associated with a "national identity," vernacular is associated with a "tribal identity." There does not seem to be a divisiveness or friction between the two -- just as you have a dual identity of being a tribal member and a Kenyan, so you have a different language that goes with each. There is a time and place for each, and a different kind of loyalty to each.

C. Radio Use

Radio is the most widespread mode of communication in Kenya. Even the poorest own radios. If families have one possession, it will be a radio. You hear radios everywhere you go in Kenya: in the market and shops; in houses you pass on a walk through a village; in nearly every school. Those who don't own radios still listen to them, usually at friends' or relatives' houses.

Sixty-four percent of the students we interviewed said their parents owned a radio. These children were from families where 55% of the fathers were unemployed, or in unskilled jobs, or not living with the family, and where 61% of the fathers and 70% of the mothers had not attended school beyond standard 3. Virtually all the students said they listen to the radio -- to the news, for entertainment and, of course, in school. Even if they don't have a radio at home, they will seek one out to listen to.

Of the parents we interviewed, 78% said they owned a radio. Eighty-one percent of the parents were either unemployed or in unskilled jobs. Only 4 parent respondents and 3 teachers said they didn't listen to radio, while 41% of parents and teachers alike said they listen more than 30 hours a week. Ninety-six percent of teachers own radios.

Radio forms a vital link from the countryside to the rest of the world. Everyone who reported that he listened to the radio said he listened to the news. Fifteen percent more parents listen to the radio than read newspapers. Only fractionally fewer respondents said they also listen to the radio for entertainment purposes. Of course, all the children listen to educational programs, and 86% of the parents said they listen to educational programs as well. Respondents reported that they listen primarily in Swahili. Of the students, 63% said they listened to the news in Swahili versus 31% in English; 52% listened to pleasure programs in Swahili, 28% in English; 15% listened in vernacular. By district, students listened more to Swahili in Machakos and more to vernacular in Kiambu than the norms. Educational programs for the children are, of course, primarily in English. The parents listen to even more Swahili than the students. Seventy-one percent listen to the news in Swahili, against 10% in English and a reported 13% in vernacular. Forty-nine percent listen for entertainment in Swahili; 33% in English; 8% in vernacular. Forty-four percent reported listening to educational programs in Swahili, versus 33% in English and 8% in vernacular.

By district, parents in Kwale stood out in their radio usage profile. Thirty-five percent parents owned radios; they averaged about half as many listening hours; and they reported listening exclusively in Swahili. The teachers listen more in English than the other groups do. Sixty-four percent listen to the news in Swahili while 37% listen in English; 63% listen to pleasure programs in Swahili versus 32% in English and 5% in vernacular. In sum, roughly between 30-40% of listening to news and for pleasure is done in English. Among teachers in Kisumu and Kiambu, there is at least twice as much news listening in English as to Swahili. In Kwale, Kisumu, Kakamega, Kericho, teachers listen almost entirely in Swahili. In Machakos they are split, and in Kiambu and Kajiado, they listen nearly twice as much in English as in Swahili.

Nearly half the teachers said they had studied by radio themselves when they were in school, more in Kiambu and Machakos, fewer in Kericho and Kakamega. About a third of the teacher respondents had studied English by radio. Ninety percent of the teachers said they have used the radio in their

classrooms (there are no radio lessons available to standard 1) and slightly more than half the teachers have had at least three years of experience teaching by radio.

Students reported very positive feelings about using the radio. They said they liked the variety it offered; it was a nice change from the classroom teacher; the lessons were very organized; they heard lots of new, different and interesting material; they liked the music and songs.

Teachers reported that they thought about 80% of the students were "somewhat" or "very" positive about using the radio in their classrooms. Many said that children liked listening to radio because it brought significance to what they studied about -- the students believe that if they hear about something on the radio, it must be important to the rest of the country. They seem to trust the radio.

There were, of course, drawbacks to radio use in the classroom. Despite the good and favorable reports about radio, students still preferred teacher instruction to radio instruction by nearly 2 to 1. Students in Machakos and Kericho gave their teachers the highest ratings. Nothing, they reported, can take the place of human contact. They like the teacher because he is there to explain or clarify what they haven't understood on the radio; to give feedback, corrections; to drill and practice; to backup and repeat; to monitor their listening.

Teachers echoed these feelings by the students, and added a few reasons of their own. Eighty-six percent felt that radio was "somewhat" or "extremely" helpful to them in the classroom. Teachers in Kiambu -- the most experienced in radio use in the classroom -- were also the least enthusiastic in their impressions of how helpful it was to the classroom; more than 71% rated it as "somewhat helpful" compared to the norm of 31%, and only 21% rated it "extremely helpful" compared to the norm of 55%. They were similarly more negative in their responses of how their students would rate the usefulness of radio in the classroom -- favoring "somewhat positive" twice as often as "very positive", which is the reverse of the norm. Nearly unanimously, teachers felt their presence in the classroom, working with the radio, was essential. Besides what the children said, teachers felt they were also needed to enforce disciplined listening, to encourage concentration and participation.

Many of the respondents discussed their feelings about English lessons on the radio. These are not easily quantified, but are easily discussed in terms of content, style, methodology.

The main point we gleaned from our discussions with teachers is the necessity of gearing the content of the lessons to standard 1, 2, and 3 children from rural areas. The children, they said, were very naive and limited in their worldly experiences. The teachers in Misakwani Primary School, on the hill above the city of Machakos, and in full view of the city just closely below, said that probably only 5-10% of those young children had ever been down the hill and into the city. Yet, this was one of the least remote schools we visited. The experience of these children, they said, is limited to family life, life in the fields and the family shamba. They know about animals, crops, weather, family, daily routines, going to school, folk tales and fables, markets, villages, small shops, stories about their own tribes and rituals and customs. The children do not come to school with much knowledge about city life: post offices, taxis, telephones, hotels, tourists, businesses, cars, vacations, television. Their introduction to other peoples' ways of life should begin with stories about Kenya, not America or England or the rest of the world.

The children will not go home to feedback or reinforcement of their English lessons. Forty-eight percent of the parents interviewed said they did not speak English. Thirty-five percent said they did help their children practice English at home. Fourteen percent said they had taught their children songs or rhymes or stories in English. So, while a few children may hear parents use English, (or more likely older brothers and sisters) at this age it is almost exclusively a school activity. For the children in standard 1-3, it is an activity even further restricted to English language period.

Although most teachers reported using, or trying to use, English "outside the classroom, on the school grounds" with the children, most qualified their answer by saying that they used the vernacular with the standard 1-3 students (or Swahili when they didn't share a vernacular) because the little ones didn't understand enough English.

Nearly all the teachers (93%) felt strongly that the teacher and radio should work together; that the teacher enhances the worth of the radio broadcast in a vital way. Everyone would like to have supplementary classroom materials and visual aids, given the choice. There is such a dearth of teaching aids in these rural schools, and any materials they do have are so novel to the children, that any accompanying materials would be a very attractive addition -- one that would surely enamour the radio lessons to most children and teachers instantly.

Teachers were split on the question of language of presentation of the English lessons. Sixty-four percent felt the lessons should be presented entirely in English. They felt the teachers could provide the explanation in Swahili or vernacular -- whichever were more often used -- when it was necessary. Thirty-two percent felt the programs should be supplemented by explanation in another language -- usually Swahili. A few said they would prefer the explanations to be in vernacular -- although, they were aware of the difficulty of doing this for lessons that would broadcast nationwide.

Teachers said that they would like to prepare in advance for the broadcasts, and that they would prefer a teacher's manual to work with radio programs which would guide their preparation. Teachers reported several things that the young children find appealing in lessons. They like music of any kind, and particularly enjoy learning songs. They also enjoy hearing poetry, stories and skits, or things involving family characters. They like hearing lots of different background noises: animals, birds, bells, horns, whistles, vehicle sounds, etc. -- anything they can try to identify.

VI. Profile of Teachers

There were 101 teachers interviewed. More than 60% of them had taught more than six years, slightly more in Kiambu and slightly fewer in Kajiado and Kisumu. They were quite loyal to their profession -- 86% said they intended to remain as teachers rather than seek another job. The teachers were unanimously satisfied being teachers in Kakamega, and slightly less satisfied in Kajiado and Kisumu. Eighty-six percent trained formally to become teachers, most with at least two years at the teacher training

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institute. Seventy percent felt that teacher training college adequately prepared them for teaching English, and among those who didn't, the most prevalent reason was that there weren't enough courses on teaching English in particular. About 90% of the teachers have used radio to teach with in their classes, half of them for more than three years. Half of them have taught English by the radio. Sixty percent say the radio reception at their schools is good; 30% say it is fair. Reception was poorest in Kakamega, where 38% of the teachers rated it as "poor." Nearly half of the teachers had studied using radio themselves, more of them in Kiambu and Machakos, and fewer of them in Kericho and Kakamega. About a third of the teachers taught English with Progressive Peak materials and another third with Safari materials. In describing the English abilities of their students at the end of Standard 3, two-thirds rated their ability to write a simple paragraph and write a simple story as "fair." They rated their ability to follow oral instruction a little better, about one-half as "fair", and their ability to discuss daily routines, and give class reports -- about one-half as "poor". There were not big differences among the districts. Despite these poor reports, 45% of the teachers said they thought their students were able to handle English as the sole medium of instruction after Standard 3. Only in Machakos and Kwale did more teachers answer negatively to that question. They were not able to isolate any individual inadequacy in their English; they felt students were lacking in experience in English in general, and not in any particular skill.

VII. Sociolinguistic Survey Results analyzed According to School CPE Performance

One of the criteria in school selection was performance of students on CPE exams. Of the three schools selected from each district, one school was labeled a "high" performance school, one a "middle" performance and one a "low" performance school. This was based on the average CPE score of a school falling within the top middle, or bottom third of scores from all schools in the district. One of the originally planned analyses of data was to compare results from these three types of schools. However, there were great inconsistencies across districts in overall CPE scores.

For example, schools in Kiambu performed much better than schools in Machakos. The "low" performing school in Kiambu had higher CPE scores than the "high" performing school in Machakos. To arrive at a more accurate sampling of schools according to CPE performance, a reassignment of schools to the different categories was done in the following way:

The Central Bureau of Statistics provided us with uniform statistics of CPE results for all 21 schools. These appear as follows (see chart on next page). An average CPE score was figured by multiplying the average CPE score within each five-point range by the number of students obtaining a score in that range, adding the totals together, and dividing the sum by the total number of students taking the exam. The result was the "average" score. Scores from all 21 schools ranged from 13.3 to 25.4 (see Table III). It was felt that since these scores did not span a great range, the best display of the differences in schools based on exam results would be obtained by selecting two groups, a "high" performing and a "low" performing group. Schools with average scores of 20.17 and above form the "high" performing group and school of 16.92 and below form the "low" performing group. In the "high" group there was one school from Kiambu, Kajiado, Kwale, Kericho and two from Kisumu. In the low group there was one school from Kajiado, Kwale, Kericho, and two each from Machakos and Kakamega.

The following is the analysis of data from three groups of respondents: parents, students and teachers who were interviewed at the "high" and "low" performing schools. In most cases, the two groups showed very similar results and followed the trends described in the main report analyzing the country as a whole. Results that vary between the two groups are discussed below.

A. Teachers

There are a few differences in the overall descriptions of the teachers. The teachers from the "high" performing group are less experienced than those from the "low" group: about 40% have less than three years experience teaching, versus 10% from the low group; 15% more teachers from the "high" group did not intend this to be their lifelong profession, but are seeking another job.

H. ANALYSIS OF STUDENT FLOWS

Enter the number of students in each of the following

Card	0	4
Type	13	14

1. Examination results in 1979

	Boys	Girls												
Total number sitting C.P.E.	<table border="1"><tr><td>0</td><td>0</td><td>8</td></tr><tr><td>15</td><td>16</td><td>17</td></tr></table>	0	0	8	15	16	17	<table border="1"><tr><td>0</td><td>0</td><td>5</td></tr><tr><td>18</td><td>19</td><td>20</td></tr></table>	0	0	5	18	19	20
0	0	8												
15	16	17												
0	0	5												
18	19	20												
of which Number obtaining less than 10 points	<table border="1"><tr><td>0</td><td>0</td><td>1</td></tr><tr><td>21</td><td>22</td><td>23</td></tr></table>	0	0	1	21	22	23	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td>24</td><td>25</td><td>26</td></tr></table>				24	25	26
0	0	1												
21	22	23												
24	25	26												
Number obtaining 11-15 points	<table border="1"><tr><td>0</td><td>0</td><td>1</td></tr><tr><td>27</td><td>28</td><td>29</td></tr></table>	0	0	1	27	28	29	<table border="1"><tr><td>0</td><td>0</td><td>1</td></tr><tr><td>30</td><td>31</td><td>32</td></tr></table>	0	0	1	30	31	32
0	0	1												
27	28	29												
0	0	1												
30	31	32												
Number obtaining 16-20 points	<table border="1"><tr><td>0</td><td>0</td><td>2</td></tr><tr><td>33</td><td>34</td><td>35</td></tr></table>	0	0	2	33	34	35	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td>36</td><td>37</td><td>38</td></tr></table>				36	37	38
0	0	2												
33	34	35												
36	37	38												
Number obtaining 21-25	<table border="1"><tr><td>0</td><td>0</td><td>3</td></tr><tr><td>39</td><td>40</td><td>41</td></tr></table>	0	0	3	39	40	41	<table border="1"><tr><td>0</td><td>0</td><td>4</td></tr><tr><td>42</td><td>43</td><td>44</td></tr></table>	0	0	4	42	43	44
0	0	3												
39	40	41												
0	0	4												
42	43	44												
Number obtaining 26-30 points	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td>45</td><td>46</td><td>47</td></tr></table>				45	46	47	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td>48</td><td>49</td><td>50</td></tr></table>				48	49	50
45	46	47												
48	49	50												
Number obtaining 31-36 points	<table border="1"><tr><td>0</td><td>0</td><td>1</td></tr><tr><td>51</td><td>52</td><td>53</td></tr></table>	0	0	1	51	52	53	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td>54</td><td>55</td><td>56</td></tr></table>				54	55	56
0	0	1												
51	52	53												
54	55	56												

AVERAGE CPE SCORES BY SCHOOL.

TABLE III

<u>DISTRICT</u>	<u>SCHOOL</u>	<u>AVE. CPE SCORE</u>
Kiambu	Lusigetti	24.08
	Githirioni	19.74
	Mukui	18.45
Machakos	Misakwani	17.81
	Kitonyini	15.51
	Kisovo	13.30
Kajiado	Isinya	20.70
	Olepolos	19.10
	Upper Matasia	16.40
Kwale	Mwamunga	20.32
	Muhaka	18.80
	Mvindení	16.20
Kisumu	Rabour	23.07
	Lela	20.17
	Awasi	17.18
Kericho	Kapkatunger	25.41
	Torit	18.87
	Chepsir	16.92
Kakamega	Mukumu	19.61
	Shikundi	15.76
	Muraka	15.71

The teachers from the "high" group are harsher in their evaluations of radio usefulness: there was about a 25% differential in responses on the usefulness of radio instruction in the classroom. Teachers from the "high" groups described it as "somewhat helpful" while those from the "low" group gave it the highest rating of "extremely helpful." Correspondingly, about twice as many teachers from the "low" group reported that they felt their students "very positive" about radio instead of "somewhat positive" as reported by the "low" group.

There are differences in responses from teachers from the "high" and "low" groups that revolve around English language ability and English language use. Teachers in the "high" group said they studied English more years than those in the low group -- about 20% more studied "more than 7 years." About 25% more teachers from the "high" group rated their English abilities to understand, read and write in the top category. This may account for their increased use of English in several situations.

About 10% more than the "high" group said they use English for official functions like the post office, bank, police, employer. The "low" group uses more Swahili. About 15-20% more from the "high" group said they use English for informal writing, such as personal letters, notes, diaries. The "low" group uses more vernacular. About 15% more from the "high" group listen to radio news in English. The "low" group listens more in Swahili.

Similarly, 15% more teachers from the high group report using English with students outside of class, on school grounds, etc. The "low" group uses more Swahili. These same teachers report about 15-20% higher ratings on their students' abilities in English. But ironically, although more teachers from the "high" group reported more favorably on their students' abilities in English, about 15% more teachers from the "low" group reported that they thought their students were ready to handle English at the sole medium of instruction after Standard 3.

The overall increased use of English at "high" group schools, and higher evaluation of "high" group students correlates in a very sensible way with higher CPE performance.

B. Students

Ironically, students from the "low" performing group of schools rated themselves better in their English abilities than students from the

"high" group -- 25% better in speaking and understanding; 10% better in reading and writing. These figures correlate with district differences as well.

The only other noticeable difference in responses from the students is that students in the "high" group listen 25% more to the radio news in English and students in the "low" group listen 25% more in Swahili. While students from the "low" group may feel their English is relatively strong, students from the "high" group show that they actually use English even when they are not required to (i.e. listening to radio).

C. Parents

Statistics showed that parents in the "low" group had lower status jobs: that is, there were more people in "unskilled" positions (43%), compared to the "high" group (18%) while people in the higher group had more respondents in "semi-skilled" and "skilled" positions (54%) than the low group (19%). There were no differences among spouses' jobs and no differences in education. The only difference in language use in work situations was that the "low" group used more vernacular at work (90%) than the "high" (65%). This is not surprising considering the level of their positions.

These differences in job types could be related to the factor of performance of schools: schools in lower socioeconomic areas performing less well. It is also related to the different balance of regional input, i.e., there are no schools representing Kiambu (a district where parents have higher quality jobs than is the norm) in the "low" group, and there are two schools from Machakos (a district where there are many more parents in "unskilled" jobs than any other district).

A second difference centers on the use of Swahili. Parents from the "low" group judge themselves better in Swahili in relation to their peers than parents from the "high" group, by 34% versus 18%. This higher self-evaluation correlates with several instances of increased use of Swahili. They reported using a little more Swahili (about 15%) in some "official" situations, e.g. bank, post office, police station, and in "community" situations, e.g. market, church. They also used more Swahili (20-35%) for "official writing" and reading magazines than parents in the "high" group.

They favored Swahili over English more for the language of Parliament; 90% versus 71% for the "high" group.

While a strong self-evaluation of ability in Swahili seems a reasonable explanation for increased use of Swahili it is difficult to find a connection between increased use in this wide variety of situation and the factor of having children in "low" performing schools. A third factor -- district differences -- should not be overlooked. In the "low" group of schools, there is no representation from Kiambu or Kisumu -- the only two districts that favor use of vernacular over Swahili in these "community" situations. Thus, without input from these two vernacular-favoring districts, results naturally favor Swahili.

The district argument could also hold for favoring Swahili as the language of Parliament: the only two districts where any strong support is shown for English use in Parliament are Kiambu and Kisumu -- again the two districts that are not represented in the "low" group. Similarly, no one from Kiambu or Kisumu reports reading magazines in Swahili.

VIII. Survey Results According to Location in Relation to Nairobi

In another analysis, the population was broken into two groups: group 1 = the three districts that are located near Nairobi, Kiambu, Machakos, Kajiado; group 2 = the four districts located at the east and west ends of the country, Kisumu, Kakamega, Kericho and Kwale. While the results do show a few differences between these two groups, in all but one case, the factors accountable for the differences seem to be something other than the distance from Nairobi. For example, results for group 2 shows more use of Swahili, and better evaluations of ability in Swahili. However, the difference is not consistent among the four districts of group 2, but rather is the result of extremely high figures from one district, Kwale. The differences from Kwale were enough to alter the overall results for group 2. Similarly, among parent respondents, the questions that concerned "language use in the community" indicated that Swahili was favored among group 2. When broken down, however, there was again no consistency among the districts in group 2. Swahili was indeed favored in this context in Kwale and Kericho, but it was also heavily favored in Kajiado, a district

from group 1. Further, the vernacular was highly favored in one district from each group Kiambu and Kisumu. While the mean scores suggested a tendency for Swahili in group 2, it was, in fact, not the case for the districts to share this trait.

In another example, among students, there is more Swahili spoken in schools that belong to group 2. But again, a closer analysis shows that there is no consistency among all these schools that lie far from Nairobi, but rather that the difference is extreme and concentrated in Kwale, and in the schools in the western districts where children were native speakers of several different languages, and thus, they used Swahili as their common tongue.

One variation among teachers seems restricted to group differences: group 2 teachers report about twice the level of dissatisfaction than teachers from group 1 with their own English abilities, and said that they were studying formally to improve their English. Figures show that this difference remains consistent from school to school in each group. Interestingly, however, there is no difference in the teachers' self-evaluation of their own English.

One more complicated difference indicated that teachers from group 2 evaluated their students' abilities in English lower, and their ability to handle English as the sole medium of instruction after standard 3 less than teachers from group 1. Looking at the districts individually seems to indicate that the figures for three of the districts in group 2, Kericho, Kakamega, Kisumu, do follow this pattern, but that Kwale does not.

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APPENDIX B

GRANT HENNING
LANGUAGE TESTING CONSULTANT
TRIP REPORT
AUGUST 28, to SEPTEMBER 10, 1981

CONSULTATION IMPRESSIONS AND COMMENTS

1. The number of schools and sampling method seem adequate.
2. The primary difficulties will be:
 - a. preparing simple enough items .
 - b. devising tasks that are valid for measuring reading comprehension and listening comprehension.
 - c. preparing enough items per task to ensure reliable measurement without tiring students.
 - d. standardizing procedure so that identical instructions and practice activities are available to all language groups.
 - e. piloting the test in order to reject inappropriate items, provide tentative reliability and validity measures, and develop possible equated forms before the November administration.
 - f. devising a procedure to identify nonvalid participants (e.g. impulsive markers, guessers, cheaters, hearing impaired, anxiety crippled, non-attentive) so as to prevent them from contaminating the data.
 - g. reducing administration time by streamlining classroom procedures as much as possible.
3. One possible measurement problem depending on one's philosophy of instruction is that the tests will be developed and administered to control before the broadcasts. This will permit foreknowledge of control group weaknesses and design of lessons to the advantage of the experimental group, in terms of the instrumentation employed. This need not occur if lesson developers are not shown control group results.

4. Further on sampling procedure, the stratification of schools on general examination results is probably a superior approach to that of the Nicaragua experiment which stratified on urban-rural location. Ensuring the greatest possible ability spread will probably enhance reliability of measurement.

5. The Nicaragua project achieved .82 KR20 reliability on their *28-item first-year math pretest, achieving a standard error of measurement of 1.91, indicating a test standard deviation of 4.50 on their Spanish revision of the TOBE. By Spearman Brown Prophecy formula, this suggests a similar test of 55-item length would have produced .90 KR20 reliability; 35 items would have produced .85 reliability. This suggests that, although content and sample are different, it would be inadvisable for the present test to contain fewer than 35 items and unnecessary to exceed 60 items. Flexibility in that range will depend on ease of the tasks involved, total time of test administration including instructions, distribution of forms, etc., and also upon the level of reliability desired for subscales of the test. Thirty items of listening comprehension and thirty reading items would possibly permit a minimum acceptable level of confidence in the respective subtests, provided the test is piloted and revised on a sample of 100 or more representative children.

* (This was a pretest achieving a mean of around 20 out of 28. Presumably more items could be used on a post-test because of greater maturity of the children.)

6. Test administration will need to be conducted by trained project staff rather than teachers with a vested interest in the comparative success of their classes. This is a serious matter --otherwise the entire procedure may fail.
7. Of course children will need to be tested before they leave for summer or term break. It is important to be sure that testing dates preempt any premature exodus from schools. In Egypt boys begin dropping out in March for various reasons, although teachers are paid to teach until May.
8. If it proves undesirable to employ a minimum of 60 items (30 LC and 30 Rdg) (preferably 35/35 = 70), a matrix sampling procedure may be followed similar to the Nicaragua project. Here 120 items would be required (60 LC and 60 Rdg), but any given student would receive no more than 30 items (15 LC and 15 Rdg) or 40 items (20 LC 20 Rdg) depending on the matrix pattern. The matrix sampling procedure has advantages:
 1. students are not overburdened in the testing situation: the task is reduced.
 2. a variety of forms could be available in each class to prevent cheating.
 3. more items, hence, achievement objectives are tested: more diagnostic information.
 4. an element of random assignment of treatment form to subject may be introduced.

It also has profound disadvantages:

1. the sample is effectively reduced to a third or a fourth the size for statistical inference; i.e., fewer completed tests are available.
 2. analysis of results becomes vastly more complex.
 3. simultaneous or group testing (LC) becomes complicated and confusing to the children if forms are individualized; i.e. if there is variation within class.
 4. coordination of administration procedures is greatly complicated.
-
9. In the situation where three groups are employed in the design (21 -school experimental and control groups for summative evaluation, and the observation formative evaluation group), the summative posttest could be given to all three groups separately to test treatment effects and treatment plus formative evaluation effects.
 10. It is crucial that not one test form applied to control group children before the treatment is administered to the experimentals should pass into the hands of the teachers or the children. Otherwise experimental teachers may teach to the test.
 11. In light of difficulty 2.f. discussed above, I recommend that the summative test data be subjected to Rasch person fit analysis in addition to the traditional analyses necessary. This could be done using American University in Cairo's BICAL software at very minimal cost. The advantages would be (1) that nonfitting persons (e.g. cheaters, hearing impaired, non-attentive, etc) could be identified and prevented from contaminating the data, (2) reliability of measurement might be substantially increased, and (3) all items could be calibrated and tested for fit to a latent trait scale.

12. Unlike procedures in the Nicaragua project, measures of test validity should be included. This is particularly true since both listening comprehension and reading comprehension are being measured and generalizations are being made from these measures. This procedure could take the form of multitrait-multimethod validation (Campbell & Fiske, 1959) where two methods of assessment (say, recognition and production tasks) may be employed for each of the two traits (listening comprehension and reading). This would permit inferences about construct validity from a simple 4 x 4 matrix of correlation coefficients.

13. The formative evaluation should include some of the following components:
 - (a) an observation rating form for the observer to note on a Likert scale the extent to which students are attending, responding, following instructions, etc., for each segment daily.
 - (b) an affective questionnaire for teachers, observers and possibly students to indicate on a Likert scale the extent students enjoy the different components of each lesson or series of lessons;
 - (c) a cognitive criterion test to measure the extent to which children have mastered objectives of instruction for each lesson. These may be administered on a daily, weekly, or monthly basis, depending on the feedback needs for formative evaluation;
 - (d) a free-response component for the observer to make general comments on each lesson after it has been presented. Here it will be useful to have several observers simultaneously observing several different classrooms to compare responses on a and d above.

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14. It was noted in group discussion that there are at least three basic ways to design the summative test.

(a) A 60-item instrument would be written and piloted with 30 items of listening comprehension and 30 items of reading comprehension. This would probably satisfy reliability needs, but might prove exhausting for the children, even if total administration time could be reduced to 45 minutes, which would be a useful target time.

(b) A matrix sampling procedure could be followed using 60 items of listening and 60 items of reading. By this procedure each student would receive no more than 30 (i.e., 15/15) or 40 (i.e., 20/20) of the total 120 items, depending on the matrix variation. One variation is illustrated as follows:

		Listening				Reading				
Group 1	1A					1B				
2		2A					2B			15 items per cell
3			3A					3B		
4				4A					4B	

Another variation could be:

		Listening				Reading				
Group 1	1A					1B				
2		2A					2B			20 items per cell
3			3A					3B		

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Advantages and disadvantages of these approaches were noted in comment number eight above.

(c) A Rasch Model approach would permit selection of an appropriate number of items arranged along a difficulty continuum for each subtest. Children could be encouraged to stop when items become too difficult for them. Thus also some administration time might be reduced in this way and frustrations minimized. While this overall approach has much to offer, it is probably too radically innovative to introduce at this point in the plan.

From the viewpoint of the children the approaches would probably rank in the following order of preference: b1, b2, c, a. From the perspective of measurement theory the prioritizing would probably be: c, a, b2, b1. From the standpoint of the statisticians who have to analyze the data and make sense of it all the preferred order may be either a, b2, b1, c or b2, b1, a, c, depending on whether they desire more information on a greater range of objectives with less statistical power (latter priority order) or greater statistical power with less specific information tested (former priority order).

By weighting the four priority orderings equally and averaging, option b2 appears the strongest. By this option children would receive 40 items according to the second matrix above. This would also permit construct validation if 10 items are tested in each of two modes for both skills measured.

15. In staff discussion five objective categories were identified for testing of listening and five for testing of reading. Each of the five persons present agreed to prepare five items in each of two objective categories, one under reading and one under listening. After editing, this will give us fifty items for tryout on a mini sample of a maximum of 30 children of standard one this week. By correlation of objective category scores with total scores for reading or listening it should be possible to identify the most promising two objective categories within each of the two general skills. Hopefully common differentiating qualities will be found for the two sets of objective categories (e.g. production, recognition) to permit construct validation. The plan after the mini-pilot would be to prepare about 160 items over all structures and vocabulary in the syllabus in two general skills, two objective categories, and two administrative modes -- about 20 items in each of eight developmental cells. These would be piloted and analysed next week for about 100 children.

The five within-skill objective areas mentioned above were:

Listening Comprehension

1. responding to instructions or implications
2. recognizing sound contrasts.
3. word recognition (meaning/form) with pictures
4. sentence comprehension (dictation)
5. answering questions.

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Reading Comprehension

1. naming upper and lower case letters of the alphabet, ordering letters.
2. reading vocabulary, matching written to written or spoken words or structures to a picture.
3. analysing structure to read new words including plurals, inflections,
- 4 matching pictures with words and sentence options
5. cloze recognition with auditory stimuli.

16. On September 3, 1981, the Min-pilot Summative Evaluation Test (MSET) consisting of 50 items in two skill areas and 10 testing formats was administered to 30 standard one children of Kahuho Elementary School. The school was selected because of its proximity to Nairobi, cooperation of its headmaster, and presumed median ability of the children. Muitungu, a project staff member who is a native speaker of Kikuyu, the language of the children, administered the test following a day of rehearsal at the project centre. The other staff members present assisted in distribution and collection of materials and in timing of the segments of the test.
17. The purpose of the MSET administration was to determine two listening and two reading item formats which would be best from among the ten formats described in no. 15 in terms of probable reliability and validity of the Final Summative Evaluation Test (FSET). It would be possible to compute measures of reliability (KR-20 and KR-21) and validity (predictive and construct) for all sub-scales of the MSET, and based on these estimates decisions could be made about the characteristics of the Pilot Summative Evaluation Test (PSET) to be administered to a larger sample of children (about 100) on September 9, 1981.
18. Results of the administration of the MSET may be summarized in the following tables:

TABLE I

MEANS, STANDARD DEVIATIONS, CORRELATION COEFFICIENTS AND PREDICTIVE VALIDITY COEFFICIENTS FOR FIVE SUBSCALES OF LISTENING COMPREHENSION AND FIVE SUBSCALES OF READING COMPREHENSION.

(N = 30)

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L I S T E N I N G

R E A D I N G

	1	2	3	4	5	T	1	2	3	4	5	T	GT
M	2.400	2.400	3.733	1.633	1.433	11.600	4.500	3.067	3.033	1.433	1.567	13.567	25.167
S	1.793	1.499	1.413	.850	.935	3.874	.820	1.484	.850	1.104	1.406	3.821	6.716
r	.784	.622	.881	.027	.287		.424	.814	.376	.716	.811		
r _c	.460	.288	.737	-.189	.048		.225	.591	.163	.522	.604		

The correlation coefficients of Table 1 reflect the correlations of the individual subscale formats with the total scores for the skill area (listening or reading) which they represent. The bottom row presents these coefficients after correction for part-whole overlap to remove the contribution of the item format score to the skill area score. As such the bottom row reflects an estimate of predictive validity; i.e.

the extent to which each item format subscale predicts a more general measure of the skill in question. Based on the magnitudes of these coefficients, the decision was made to employ listening formats 1 (responding to instructions) and 3 (word recognition with pictures), and reading formats 2 (matching words to a picture) and 5 (cloze recognition with auditory stimuli). See parts one and two of the MSET.

TABLE 2

KR-21 RELIABILITY ESTIMATES OF MSET
BEFORE AND AFTER SELECTION OF PREFERRED
ITEM FORMATS (N=30)

N of Items	Original Reliability		N of Items	final Reliability	
		KR-21		KR-21	KR-20
Listening	25	.610	10	.805	.853
Reading	25	.599	10	.735	.807
Total	50	.738	20	.838	.880

It is important to note that KR Formula 21 provides a slightly more conservative estimate of reliability than KR Formula 20. The estimates above indicate that the reliability achieved with MSET with only 20 items is already considerably higher than that of the TOBE, with 28 items, employed in the Nicaragua Project. And the MSET is only a trial instrument. Some comment is warranted about the construct validity of the MSET. Initially, the reading and listening total scores were correlated for the original 50-item instrument (.524) and for the edited 20-item instrument (.531). This indicated that the skills of listening and reading comprehension were distinct as measured. The correlations were ^{low} enough to warrant a conclusion that something different was being measured in the two skill areas of the MSET. It is also important to note that individual formatting subscales correlated more highly with their own skill area than with the other skill area

TABLE 3
CONSTRUCT VALIDITY OF THE REVISED
MSET (N=30)

	L1	L3	R2	R5
Listening Total r	.784	.881	.539	.568
r _c	.460	.737	-	-
Reading Total r	.394	.515	.814	.811
r _c	-	-	.591	.604

Note that even after correction for part-whole overlap, the chosen subscale formats were clearly more highly related to their own skill area than to the other skill area tested. This was particularly important with R5 subscale format since for this task category an auditory stimulus was employed with a predominantly reading task.

19. The high observed reliabilities of the MSET with comparatively few items lead me to revise downwards my original estimate of required numbers of items on the PSET and FSET. Probably 80 good items would be sufficient, i.e., 20 in each of four subscale formats.
20. Regarding administration time of the MSET, this is summarized below in minutes.

Test Segment		Distribution and Explanation	Administration	Total
Trial Sheet		8	-	8
Listening	1	4	6	10
	2	5.5	3	8.5
	3	2.5	3.5	6
	4	2.25	4.25	6.5
	5	2	6.5	8.5
a break of 13 minutes was allowed between sections				
Reading	1	5.25	2	7.25
	2	3	4.25	7.25
	3	2	2	4
	4	2	4.75	6.75
	5	1.75	5	6.75
grand total				79.5

gained familiarity with tasks.

21. Considerations about summative evaluation procedures --
- (a) It would appear desirable that the summative evaluation schools be visited at least once a month to ensure that the radio broadcasts are being fully utilized, to check to see that the radio and other materials are fully operative -- supplying batteries, materials, or replacement radios where needed, to verify that control group students are not being exposed to the broadcasts or the supplementary materials, to gather useful anecdotal information from the headmasters about the application of the broadcasts, and to alert schools about summative testing dates. This would require at least one person visiting one summative school per school day throughout the academic year. A one-page report of each visit should be prepared on a form sheet prepared for this purpose.
 - (b) The final summative evaluation test will probably require nearly two hours administration time, counting instructions, distribution, and a 15 minute recess in the middle. Minimally this would require three teams of two persons a period of seven consecutive school days (nine days total) to administer. An additional three days would be needed to include the formative schools in the FSET administration. The team should be chosen so that ideally one of the members could speak the native language of the children in each school visited. A formal schedule should be devised indicating who is travelling to which schools on which days, allowing adequate travel and hotel time each case. A one-page written account of the administration in each school should be prepared immediately afterwards. It should note any deviations, special problems, or irregularities observed in test administration and timing, as well as in the participants themselves. Form sheets should be prepared for this purpose.

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(c) The test should consist of a half-page, familiarity exercise sheet, recorded native-language instructions on high quality portable cassette players, and two eight-page test booklets with five test items per page.

22.

Formative Evaluation Suggestions:

(a) Formative evaluation schools should be visited at least once per week by a team of two persons. Each visit should include (1) formal observation of a broadcast lesson in the classroom(s) using an observation form, (2) administration of a criterion-referenced test of 25 - item length, including five critical items from each lesson taught since the last visit to the school, (3) administration of a brief affective questionnaire concerning children's appreciation of the broadcast for that day, (4) collection of observation forms from resident field observers, (5) a brief prepared interview with the teacher(s) involved that week in the classroom(s), (6) a check on the radio equipment, ensuring that it is operational with sufficient batteries, and (7) distribution of materials to observers and schools as needed.

(b)

This procedure would require at least two teams of two persons each visiting one different school each day. A visitation schedule might appear as follows:

Lesson day	1	2	3	4	5
team	1	1	1	1	1
school	1	2	3	4	5
team	2	2	2	2	2
school	6	7	8	9	10
Items/lessons	5/1	10/1-2	15/1-3	20/1-4	25/1-5
lesson day	6	7	8	9	10
team	1	1	1	1	1
school	6	7	8	9	10
team	2	2	2	2	2
school	1	2	3	4	5
items/					

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In this way cognitive feedback should be available from every school for every lesson taught. Affective and interview feedback should be available from two schools for each lesson. Formal team observation should be available from two schools for each lesson. Additional resident observer observations could be available to increase the number of schools per lesson; however, great caution is necessary not to allow untrained, non-project-related persons to contaminate the procedures.

- (c) In all, formative and summative evaluation school visitation by this plan would require three project cars and five persons constantly on the move throughout the year. During summative evaluation three cars and six persons would be needed for a minimum of seven consecutive school days - or ten school days if formative schools are also post-tested, as they should be, including formative controls to permit formative/summative school comparisons.
- (d) During the year field persons should be debriefed once each week, when all their forms should be collected and filed against each lesson concerned, and the requisite sets of forms for the coming week could be supplied. This might take place on Friday afternoons. If changes occur in observation team personnel, it would be useful if this did not happen mid-week, but at the weekend.

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