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AFRICAN PRIMARY SCIENCE PROGRAM

EDUCATIONAL SERVICES INCORPORATED  
Newton, Massachusetts

R E P O R T

to the

AGENCY FOR INTERNATIONAL DEVELOPMENT

for the period

JULY 1, 1966 - SEPTEMBER 30, 1966

AID Contract No. csd-772

October, 1966

REPORT TO AID FOR THE CONTRACT PERIOD

JULY 1, 1966 - SEPTEMBER 30, 1966

The major program activity undertaken during the period covered by this report was the summer Workshop. The focus of this Workshop was again on developing and improving new materials for teaching science to African primary school children. Accent was very heavily on using locally available items. It is the plan of the program to use ESI sponsored Science Educators now stationed in various program countries to try out these preliminary materials in their own locales during succeeding months, and to adapt and modify them as the need indicates. In this way it is expected that the program can best be responsive to local conditions and priorities. A detailed report of the Workshop will be submitted separately to AID, so that a detailed summary of its activities is not appropriate in this periodic report. However, a brief summary is, perhaps, in order.

The Workshop for 1966 was held from July 6 to August 17 at the Kilimanjaro Hotel in Dar es Salaam, Tanzania, East Africa. Convening there were fifty-six African scientists, science educators, and ministry of education officials, with supporting scientists and science educators from the United States, United Kingdom and Canada. All countries actively involved in the program were represented by at least one participant, and in addition one representative from Basutoland (now Lesotho) was present under Ford Foundation auspices.

The participants divided themselves according to their general field of interest between the biological and physical sciences, each group headed by a team leader. Within these two large groups, individual working teams composed typically of three to six Africans and others, worked on the preparation of individual units in different specific subject areas. Preliminary work was done on approximately seventeen units, and written material was prepared on each, which will be included in the Workshop report to AID. Each unit, as it was being prepared, had the benefit of trial in at least one class - a local Tanzanian school, made available through the cooperation of the Tanzanian Ministry of Education. In all, eight schools were available for trial teaching purposes. Access to local schools has proved to be an indispensable part of the material development process.

While at the Workshop it became apparent that program visibility in Africa was a problem. That is, Africans present felt that it would be difficult to effectively convey to their Ministries of Education and to other influential persons, the objectives of this program without some opportunity to physically demonstrate the new techniques. A collection of simple materials, therefore, was put together for each African participant to take with him as he returned home. These materials would enable participants to put on demonstrations, for interested groups, of about six of the primary science units worked on during the course of the summer Workshop. It was felt that this would be the best way to begin to convey the spirit of the work we were attempting to do.

At an early point in the Workshop, a strong interest developed in making one or more supporting films for use by the program. The purpose here

again was to convey in yet another way the flavor of the science learning experience we were contemplating. When it became apparent that some film making experience was also present, it was decided to take raw footage of several of the units actually being taught in local classrooms by Africans. It is expected that out of the 5,000 feet of films shot, sufficient good material will be available to put together several fifteen minute black and white films, which can be used to great advantage. The film is currently being processed and edited by the ESI Film Studio. Plans for a script to provide the sound track for the film are presently under way. One major use visualized for such films is in teacher training.

AID Workshop Visits

The following AID or AID sponsored individuals were visitors at the Workshop for varying periods of time. We feel it is unfortunate that members or representatives of only four of the nine program country AID Missions were able to observe or participate in the Workshop activities.

Dr. Clifford Block	Division for Education and Manpower Planning AID/TCR, Washington, D.C.
Dr. Roger Brown	University of Illinois AID Contract Team Njala University, Sierra Leone, and Chairman of the Sierra Leone Science Centre Steering Committee
Dr. Robert Clarke	Cornell University AID Contract Team, University of Liberia "
Dr. Harold Konvalinka	Education Officer AID Mission to Malawi
Mr. S. Rea	Assistant Education Officer AID Mission to Tanzania
Dr. F. Joachim Weyl	Member AID Research Advisory Committee, Washington, D.C.

### Publication

It has been judged that several of the units produced at the 1966 summer Workshop are sufficiently well developed for printing to be undertaken. Again, simple printing of a small number of units is held to be of high importance in order for program people and people of influence in Africa to have some tangible evidence of the development work being done.

Currently three units, Ant-Lions, Powders, and Buds and Twigs are being given a final editing prior to preliminary publication. Since the school year in Africa typically begins on January 1, it is hoped to have printed materials available on these three units in Africa before that date, so that they may be incorporated into plans for teaching science in certain trial schools during the coming 1967 school year. For this reason it is important that publication of the unit materials be carried out promptly.

Proper consultation will of course be undertaken with AID/Washington prior to any unit publication, but it is hoped that this will not occasion undue delay.

### Program Steering Committee Meeting

A Program Steering committee meeting was held in September to review the program activities to date, and specifically to consider the outcome of the summer Workshop. Considerable attention was given to the tactical problem of how to produce change in science teaching in Africa through the introduction of science units such as the program is preparing. The committee significantly reached the conclusion that it would be necessary for the program to produce a

fairly large number of units covering a wide variety of subject matter in the biological and physical sciences. From this large number of units, local countries, with program consultation, could select and sequence in several alternative ways a number of units stressing local priorities in education. In this way entire alternative curricula could be put together. It was pointed out by our African colleagues that replacement of primary science curricula currently in existence cannot be accomplished unless a reasonable alternative is provided. Stress, however, is laid on flexibility and the availability of suggested alternative unit sequences.

The sequencing of units to provide a complete curricula represents a significant departure from the unit approach in the U.S. Here units are intended to be autonomous, to be fitted in to existing curricula singly or in any combination in accordance with local wishes. However, for some time to come it is expected that unit work would represent only a relatively small portion of time spent on science study in U.S. primary schools. Such is not the plan for Africa.

The Program Planning committee also discussed in some detail a mid-winter Planning committee meeting, tentatively scheduled to be held in West Africa, in late January or early February, 1967. The basic purpose of such a meeting would be to involve African Steering committee members more actively in program planning in order to attune plans more closely to actual conditions in Africa. By holding the Planning committee in Africa it is expected that most, or all of the African members of the committee can be present, and that up to date information on the progress of the science program in various program countries can be fed in more currently. It was felt that visitations by program representatives will have been made to all program countries prior to the meeting,

so that up to date information on the trial work being conducted in each of these countries can be available.

### Science Centers

As reported in the previous periodic report to AID, additional ESI Science Educators were scheduled for posting to various locations in Africa following their participation in the summer Workshop, concluding in mid-August. New Centers are now open at the Domasi Teachers' College in Domasi, Malawi, at the Mid-Western Technical College in Auchi, Mid-West Nigeria, at the University College, Dar es Salaam, Tanzania, and an additional person has been added to the staff of the Center in Eastern Nigeria at Enugu. All new personnel are on location, and by and large have settled nicely into their posts.

Nigeria, because of the current political turmoil, presents serious problems to the program. With the obvious uncertainties existing at the moment, it is questionable how effective programs for inducing change can be under present conditions, even assuming personnel will be able to stay on there. The general attitude, as determined from early reports, seems to be to wait and see, not to change anything, to play it safe. This may necessitate some careful reassessment of the deployment of the ESI Science Educators in Africa for most effective utilization. If it develops that better deployment of our manpower resources can be made, then we would expect to reassign people to other posts for the balance of their two-year tours of duty.

In the meantime a substantial recruiting program is under way to find additional Science Educators to serve in other program countries. Sierra Leone

remains as an early possibility for establishment of a new Science Center, with facilities already available at the University of Njala, Njala, Sierra Leone.

In Ghana, where it was previously reported that Science Center activities were soon to be under way, the proper location of the Science Center may turn into a short-term stumbling block. Whether the University College of Cape Coast or the Curriculum Development Centre at Salt Pond is the best location for such activity can only be decided by the local Ministry of Education. The decision is not yet forthcoming; the program would be satisfied with either location. We would expect that an ESI Science Educator could be found for service in Ghana without much difficulty. Several are being considered for the post at the moment.

Attempts to stimulate the formation of a primary Science Center activity in Uganda are moving forward. Considerable discussion was held with the Director of the Institute of Education at Makerere University College and enthusiasm has been shown by the Director for having such an activity under his direction. A visit by the Project Director with officials of the Ministry of Education in Kampala in late July revealed that a Science Centre established under Institute of Education aegis may indeed be a possibility. There appeared to be considerable receptivity to the idea.