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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

OCTOBER 1, 1966 - DECEMBER 31, 1966

AID Contract No. csd-772

January, 1967

REPORT TO AID FOR THE CONTRACT PERIOD

OCTOBER 1 to DECEMBER 31, 1966

A number of developments of significance took place during the period under review. Four new Science Educators settled into their new posts in various African locations; three of these locations show great promise of useful Science Center activities developing; changes during the three month period in one location have caused a reassessment of program opportunities there. The first preliminary units prepared by the African Primary Science Program in printed form are now ready for extensive trial use in African classes. The beginnings of a useful relationship with the Peace Corps and some United States Peace Corps Training Programs are emerging. And finally the model for the development and training of African counterparts for ESI sponsored Science Educators at the various African in-country Science Centers is beginning to unfold.

Following completion of the Dar es Salaam Workshop in mid-August 1966, four additional ESI sponsored Science Educators were deployed to their Science Center posts in various Program countries. By October 1st useful activities were already apparent and plans for action were being carefully hammered out. High hopes for useful primary science curriculum development work are held out for the new Science Centers in Dar es Salaam, Tanzania, and in Domasi, Malawi, and the addition of a second ESI Science Educator at the Center in Eastern Nigeria has sparked new enthusiasm for the project there and has significantly increased its effectiveness.

Dr. Eugene Godfredsen, now posted to the Institute of Education at the University College in Dar es Salaam, Tanzania, has devised a very active program for the trial of new materials in a selected number of local primary schools. He has also begun to establish good relationships with a small number of teacher training institutions, in order to determine to what extent teachers currently in training can be taught to use new primary science teaching methods and materials. The Teacher Training College in Morogoro has been unusually helpful in this connection. Dr. Godfredsen has also been actively involved in chairing a panel established by the Ministry of Education in Tanzania to consider the addition of agriculture into the primary science curriculum. Agriculture has a high priority in education there at the moment. An opportunity to participate in the work of this panel provides useful insight into local educational needs, priorities and problems.

In Malawi a similarly encouraging situation exists. The Science Center is located at the Domasi Teacher Training College in Domasi, near Zomba, Malawi. Quarters have been set aside, and furnished by the Ministry, and a Malawian is on duty part time as a counterpart at the Science Center, with the commitment that he will be moved to full time work in the near future. The first assignment in Malawi has been to establish an order of priority of work acceptable to the Ministry, which has now been largely agreed upon. Again attempts are now being made on a limited basis to try out units in local schools to determine to what extent local modifications may be necessary.

In Eastern Nigeria the recent change in administration at the University of Nigeria at Nsukka has caused a reappraisal of the University's commitment to the Science Center activity and to curriculum development projects in general conducted through the Institute of Education there. Fortunately, a recent decision of the new Vice Chancellor seems to endorse the work of our Primary Science Program enthusiastically. The immediate result is that plans are now under way to relocate the Center on the campus itself at Nsukka, which was impossible previously because of lack of adequate facilities due to the unusually rapid growth of the University. Housing for Science Educators will presumably be available within the next two or three months, and quarters for the Center including laboratory space and office facilities have been promised. The combination of a gifted teacher and an unusually able science developer which comprises the ESI team in Eastern Nigeria, augurs well for valuable curriculum development efforts there.

The tours of duty for these two individuals will normally be completed as of the summer of 1967. Due to the political unrest in the country generally, there is some question as to whether or not replacements should be deployed to Eastern Nigeria to carry on the work. That situation is currently under active review. AID/Lagos has been, and will continue to be carefully consulted on this question.

The principal adverse development of the period under review has been the deterioration of the Science Center work in the Mid-West Region of Nigeria located near Benin City. C.W. Bassett, the ESI Science Educator, was posted to this region following the conclusion of the summer workshop and took up

duty at the Science Center quartered at the Mid-West Technical College in Auchi about 80 miles North of Benin. It became apparent very soon after his arrival that the commitment which had been made to the Primary Science curriculum development activity by a previous Ministry of Education official was not being carried through by his successor. The situation appeared to be serious enough for the Program Director to undertake a visit to the Mid-West Region in early December 1966 to talk directly with the Ministry about ESI's continuing commitment to primary science work there.

The result of this meeting was that an agreement was reached to withdraw the ESI Science Educator from the region. This withdrawal seems to have been negotiated without adverse reaction. Bassett is still physically located with his family at Auchi pending reassignment to a newly emerging Science Center activity in Ghana. This change of assignment was negotiated in early December following the talks in Benin.

The new Science Center in Ghana is to be under the aegis of the Ministry of Education and located in Accra. Personnel and buildings are currently available for the project, and we expect that the activity will get under way very quickly - in fact as soon as Government housing can be made available to Bassett and his family.

SCIENCE UNITS

Preliminary versions of "Ask the Ant Lion"¹ and "Powders" are now available in printed form as of the end of December, 1966. Copies of these units have been sent to Science Centers in Africa for trial use in schools

specifically for the purpose of determining the need for local modification. These units will also be useful in beginning a meaningful dialogue with African ministries on the objectives of the Science Program. Oral discussion thus far has failed to fully convey the meaning of new science teaching methods.

The first two units selected for printing were picked on the basis of the general quality of the work done, as well as the internal contrasts the two units provide. In the one case, "Powders", the unit is carefully structured in terms of what the teachers are told to do in various lessons; whereas "Ask the Ant Lion" is a much more open ended unit where the teacher is given considerable freedom to develop the unit in a variety of ways. It was felt to be important to try out these two types of units extensively to determine which general format would work more successfully in African situations with teachers largely untrained in science. The results of this early trial will dictate the general format of future unit materials.

PEACE CORPS RELATIONSHIP

ESI has held several contracts over the past year and a half for training various Peace Corps contingents including several to be sent as teachers to African countries participating in the African Primary Science Program. It seemed appropriate to explore the possibility of exposing Peace Corps Trainees to some of the new primary science materials being developed by the Program. This seems to be a particularly valid idea at the moment because in a number of Peace Corps situations, Volunteers are being redeployed from secondary school assignments to teaching posts in teacher training

institutions. Although it is not our basic purpose to determine to what extent new science materials can be taught by Peace Corps Volunteers to Africans but rather to find out how African teachers themselves can use the materials, it does broaden the try-out of the materials significantly.

Peace Corps contingents training for duty in Northern Nigeria and Ghana have been exposed to African Primary Science Program materials, and in fact have taken copies of many of these materials with them to their posts in Africa. It is our intention to keep in close liaison with Peace Corps direction in each program country to assure a co-operative effort developing between the Science Center activities and Peace Corps work.

TRAINING OF AFRICAN COUNTERPARTS

One of the most disturbing problems facing the Program at the moment is the difficulty of finding trained counterparts for Science Center work in some of our Program countries. Unless counterparts can be found, trained, and deployed to Science Center activities, the opportunity for meaningful long term influence on primary science education would appear to be minimal. As a test case, our Science Educator at the Science Curriculum Development and Research Centre in Nairobi has convinced the Ministry of Education there to consider posting to the Science Centre a Kenyan science educator with great promise but without the academic credentials felt most desirable. This individual, it is hoped, will be sent to the United States for a period of study and practical experience at ESI in science curriculum development work and returned to his post at the Curriculum Development Centre. Requests to finance various parts of this program have been made to different agencies

with optimistic responses from several. A specific request for admittance to the Harvard Graduate School of Education has been made with the idea that the individual concerned will come to the United States in September, 1967, for the academic term and possibly the academic year then getting under way. If this proves to be useful for Kenya, other countries finding it difficult to locate qualified people for science curriculum development work may undertake similar programs.

ACCRA PLANNING MEETING

Detailed plans have been made for a meeting in Accra of the African members of the African Primary Science Program Steering Committee, from February 1 to 4, 1967, and for a concurrent meeting of the ESI sponsored Science Educators, from February 1 to 10. The purpose in gathering the African members of the Steering Committee is to involve Africans more actively in the actual direction of the Program, and specifically to help identify its objectives and keep the Program in tune with reality.

The Science Educators are gathering primarily to put finishing touches on a number of manuscripts which have been tried out in the schools during the fall of 1966, and which appear to be ready for early printing and more widespread trial use. The lessons learned from the 1966 summer workshop were that such a gathering is not the appropriate place to actually write science materials. Such materials must, in fact, be written by those who are trying out the materials in classrooms and who, therefore, understand the African classroom situation thoroughly.

It is expected that the ten day writing activity by our Science Educators will permit a decrease in the size and length of the summer workshops conducted in the future. The summer workshops themselves will probably be limited to the introduction of new ideas for units and their early development.

The Accra meetings will be quartered at the University of Ghana in Legon. In advance of the meeting it is now planned that representatives of the Program, including an African educator, a scientist, and a representative of ESI, will be making visits to most countries participating in the Program to observe in-country developments at first hand, and to begin a dialogue about the content of the science materials which we are proposing to use in Africa. Until this time, insufficient exchange of ideas has taken place in this connection, the major discussions being about Program details and Science Center organizational developments. These visits will also provide an opportunity to observe the early progress of some of the new science centers and newly posted Science Educators.

PROGRAM VISITORS

During the period of this Report, the following individuals have visited ESI for the purpose of talking with representatives of the African Primary Science Program and observing its work:

Mr. H.M. Somade, Chief Inspector of Schools, Ministry of Education, Ibadan, Nigeria

Mr. D.A. Brown, Permanent Secretary, Ministry of Education, Ghana

Dr. Clifford Block, TCR/EMPS, US/AID, Washington

Mr. Bascom Storey, US/AID, Washington

Prof. Marshall Segall, Dept. of Psychology, Syracuse University (soon to be posted to Makerere University, Uganda.)

A P P E N D I X

1) "Ask the Ant Lion"

2) "Powders"