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AFRICAN PRIMARY SCIENCE PROGRAM

EDUCATION DEVELOPMENT CENTER
Newton, Massachusetts

R E P O R T

to the

AGENCY FOR INTERNATIONAL DEVELOPMENT

for the period

APRIL 1, THROUGH JUNE 30, 1968

AID Contract No. csd-772

July, 1968

REPORT TO AID FOR THE CONTRACT PERIOD

APRIL 1, THROUGH JUNE 30, 1968

The most significant event of the latest three-month reporting period was the Program Steering Committee meeting held at Kampala, Uganda April 17 to 20th, 1968. Minutes of this meeting were forwarded to AID/Washington in May 1968, and the provisional agenda and list of attendees provided with the previous Quarterly Report. The significance of this meeting is that decisions reached there have formed the framework around which the Program has since been shaped.

It would be useful to summarize briefly the major agreements reached, since they have largely determined activities undertaken during the latter part of the period under review, as well as those planned for the next six to nine months. A brief summary of decisions reached is as follows:

1. It was agreed that fifty tested and revised units would be a workable number for use by the Program, but that a process of upgrading through producing and weeding out of unit materials should continue. Significant gaps in present Program materials were evident, and development work would be pursued to prepare units addressed to these additional areas of study.
2. A first order of Program business is the convening of a small working group for the purpose of finishing certain units to be made available for trial use. As a result of this decision, the Writer's Workshop was to be convened from June 3 to June 14, 1968 in Nairobi, Kenya.
3. Certain units currently in trial use would be considered closed as far as immediate modifications were concerned. These are: Lower

Primary (eleven booklets), Soil, Powders, Ant Lions, Stars, More Stars, Chima Makes a Clock, Making Things Look Bigger, Moonwatchers, and Playground.

4. Commercial publication of Program materials continues to absorb considerable time of Program personnel. It was agreed that a general attitude of willingness to cooperate with commercial publishers would be adopted with caution. A continued discussion would be held with the African Universities Press relative to their specific interest in producing a limited number of Program materials in the near future. Program Position Paper #4 on Publishing, appended hereto, sets forth current policy in this area.

5. With respect to evaluation, it was the conclusion of the meeting that a variety of evaluation tasks have now been identified and could be undertaken by Program personnel at various science centers. However, these tasks should be under the direction of a full-time Program evaluator based in Africa.

6. The presently constituted Steering Committee for the Program would be disbanded and replaced by a Program Advisory Committee. The main function of the Advisory Committee would be to provide counsel to the Program headquarters in Newton on matters of overall policy, philosophy, and direction. Dr. T.R. Odhimabo was appointed African delegate to the Newton Advisory Committee. Further it was urged that local science centers accelerate the formation of local Advisory Panels to be composed of Ministry of Education, University and other concerned individuals. This would safeguard the essential African direction of in-country Program efforts.

7. There was general agreement that teacher training is and should be the heart of the Program. It was further agreed that a meeting should be convened in the near future to consider the establishment and testing of models for teacher training in various country situations, and the preparation of special materials for training teachers.

8. African members of the Steering Committee expressed concern about continuing contact between local country centers after the withdrawal of the African Primary Science Program. From this discussion developed the idea of an African group which should be concerned with primary education and which would have a permanent identity. Such an organization would look forward to a time when it could seek funds on its own and sponsor activities and promote educational programs. EDC has agreed to lend its good offices to encourage the formation of such an organization.

9. Growing out of Item 8 was a strong feeling on the part of African members of the Steering Committee again that there should be convened in the reasonable near future a meeting of Ministry of Education policy makers to acquaint them with the goals and the specific materials of the African Primary Science Program. Such a meeting is regarded as a most important step toward implementation. People in attendance should be those who are in a position to implement decisions¹ reached. It was further proposed and agreed to that Africans from each country who know the Program and who are qualified to address such a group would answer questions and take general responsibility for the conduct of the meeting. EDC representation would be small, and its role secondary.

Following up the recommendation of the Program Steering Committee, as indicated in Item 2 above, a Writer's Workshop was convened June 3 to 16, 1968 in Nairobi, Kenya. The purpose of the workshop was to complete insofar as possible work on an additional ten units which are badly needed at this time for trial testing purposes. The format of the meeting involved the use of small work groups of people who have been intimately concerned with the development work on each of the units to date, to complete the writing and to work with an editor on questions of layout, illustration, general format, etc. All persons attending the workshop were currently based in Africa with the exception of the editor who travelled from the United States. The Report of the Writer's Workshop (including Attachment #1, entitled "Status of Manuscripts") is appended.

The need for editorial talent at the Writer's Workshop highlighted a long standing problem - the lack of such talent in Africa at present. A concerted effort was made to find a local person who could train under our Program editor during the workshop period, but to no avail. As a result, editing will continue to be done at Program headquarters, far removed from the writers and users of the material. This leads to delay and unnecessary friction.

On June 28 a meeting was held in Newton, Massachusetts, for the purpose of familiarizing several members of the Research Advisory Committee and officials of the Agency for International Development with the African Primary Science Program, its philosophy, its objectives, its programming and its progress. Attending the meeting were: Dr. Joachim Weyl, Dr. Carroll Wilson, members of the Research Advisory Committee; Dr. Clifford H. Block, and Dr. John D. Laird, USAID; Dr. J. Zacharias, Dr. J.S. Goldstein, Messrs. G. Oakley, R. Carlisle, J. Aldrich, and R. Robins, all representing Education Development Center.

No minutes of this meeting were kept, because of its essentially informal nature. The consensus of the group, however, appeared to be that the meeting served a very useful purpose in providing a meaningful interchange of ideas about the purposes and future of such a program.

A number of actual staffing changes were consummated during the three-month review period. Professor Frederick A. Gornall of the University of British Columbia arrived in Nairobi, Kenya, to join the Program staff there June 15. Mr. C.W. Bassett and Mr. R.L. Kimball, EDC Science Educators, returned from Ghana and Malawi respectively in mid-June. Further, approval was received from USAID, based on clearance with the Malawi Government, to post Mr. Quentin Woomer as a replacement for Kimball at the Malawi Science Centre.

Our Program staff personnel in Newton made a number of in-country visits in Africa in conjunction with travel to the Steering Committee Meeting, to observe progress to date and to consult with Ministries of Education about future plans. Messrs. Carlisle and Aldrich made visits to Nigeria, Ghana, Sierra Leone, and Liberia. Mr. Robins visited Malawi to prepare for the change of Program personnel there. Dr. Goldstein, the Steering Committee Chairman, visited Kenya and Tanzania. All above individuals had discussions with Ministry and Institute of Education officials in Uganda relative to EDC's on-going activities there at the time of the Steering Committee Meeting.

EDC

AFRICAN PRIMARY SCIENCE PROGRAM

STEERING COMMITTEE Meeting, with Science Centre Representatives

APRIL 17 - 21, 1968, Kampala, Uganda

Mr. James L. Aldrich	Executive Director	EDC, Newton, Mass.
M. Banda	African Education Program	Dar es Salaam, Tanzania
Mr. C. W. Bassett	Representative from Tanzania	Accra, Ghana
Dr. T. D. Benjamin	Science Educator	Hunter College, Bronx, N. Y.
Mr. Robert W. Carlisle	Steering Committee	
	Program Director	
	African Primary Science Program	EDC, Newton, Mass.
Rev. J. Elstgeest	Representative from Tanzania	Morogoro Teachers College
		Morogoro, Tanzania
Prof. A. Babs Fafunwa	Steering Committee	Dept. of Education
		University of Ife, Nigeria
Mr. Robert B. Francis	Science Educator	Science Curriculum Centre
		Njala University, Sierra Leon
Prof. Jack S. Goldstein	Chairman, Steering Committee	Brandeis University
		Waltham, Mass.
Dr. Douglas M. Lapp	Science Educator	Makerere University
		Kampala, Uganda
Dr. T. R. Odhiambo	Representative from Kenya	University College
		Nairobi, Kenya
Mr. Gilbert P. Oluoch	Steering Committee	Director, Curriculum Development
		and Research Centre
Mr. A. O. Osiyale	EDC supported Science Centre	Dept. of Education
		University of Lagos, Nigeria
Mr. Ralph H. Robins	Administrative Director	
	African Primary Science Program	EDC, Newton, Mass.
Mr. M. B. R. Savage	Science Educator	CDRC Science Section
		Nairobi, Kenya
Mr. T. Sohl Thelejane	Steering Committee	Columbia University
		New York, N. Y.
Mr. William U. Walton	Science Educator	CDRC Science Section
		Nairobi, Kenya
Mr. William S. Warren	Science Educator	CDRC Science Section
		Nairobi, Kenya
Dr. Awadagin Williams	Steering Committee	Fourah Bay College
		Freetown, Sierra Leone
Dr. E. A. Yoloye	Steering Committee	Dept. of Education
		University of Ibadan, Nigeria

Visitor

Mr. W. Senteza Kajubi

Makerere University
Kampala, Uganda

July 23, 1968

Position Paper #4
Policy Statement on Publishing
African Primary Science Program

Publishing of Program materials continues to be an exceedingly complex issue. Events since Kampala have rendered decisions reached there partially obsolete. And, of course, any recasting of policy now is exposed to a similar danger of being outrun by circumstances. Part of the problem stems from the fact that the Program lacks full control over publishing developments in the absence of copyright protection.

Nonetheless, it seems valuable to relook at the situation as it has developed and formulate a policy as a guideline for the future. This policy is set forth below.

It would be virtually impossible to recount even a summary of the reasoning beyond this brief statement. It has, however, been discussed at great length in Newton by all concerned and represents our best collective judgment and is in accord with the Report of Writers' Workshop, Page 5, point 7.

1. Internal Program needs for trial and teacher training materials (all Program activities short of full implementation) must be met internally. Program purchase of commercially prepared materials is not feasible at this time nor in the foreseeable future. Materials in sufficient quantity to meet needs will be produced either in Newton or in Science Centers depending upon local facilities.

2. Since no science center in Africa presently has available to it the combination of editorial, artistic, and layout skills necessary to produce a fully "finished" manuscript ready for reproduction all such work will be done in Newton under the guidance of Mrs. Neuendorffer, Program Editor.

3. All Program materials whether duplicated for limited trial or for broader use should be cleared through Program headquarters for content, pedagogic, and editorial review before duplication.

4. The limited agreement reached with African Universities Press relative to publication of the "Moonwatchers", "Stars", "Chima", and "Making Things Look Bigger", as discussed at Kampala, still stands. Every effort will be made to limit commercial involvement to these four manuscripts for the foreseeable future. AUP may find it advantageous or necessary to co-publish with one or more local publishers to carry out this agreement. Science Educators should refrain from putting other Program materials into the hands of publishers.

5. The Program objective relative to materials will be to make available to Ministries of Education packages of fully tested, edited, illustrated and laid out Program materials which Ministries are then free to use in the manner best suited to local conditions. Publishers interested in Program materials must discuss publication possibilities with appropriate individuals in the various Ministries.

It is important that Program personnel undertake discussions with the Ministry relative to this point, and report back on results of these discussions as soon as possible. For the present, this information should be kept within the Program.

June 26, 1968

WRITERS' WORKSHOPNAIROBI, KENYA

JUNE 3-14, 1968

Meinrad Banda	Institute of Education	Tanzania
Dr. Eugene Godfredsen	EDC Science Educator Institute of Education	Tanzania
Fr. Jos Elstgeest	Morogoro T.T.C.	Tanzania
Dominic Kasiyre	Institute of Education	Uganda
Dr. Douglas Lapp	EDC Science Educator Institute of Education	Uganda
C. W. Bassett	EDC Science Educator Ministry of Education	Ghana
Dr. Norman Cole	Njala University	Sierra Leone
Dr. Herbert Dyasi	Njala University	Sierra Leone
Robert Francis	EDC Science Educator Njala University (Science Centre)	Sierra Leone
M. B. R. Savage	EDC Science Educator Curriculum Development and Research Centre	Kenya
William U. Walton	EDC Science Educator Curriculum Development and Research Centre	Kenya
Patricia MacFaden	Kigari T.T.C.	Kenya
Francis K'Opiyo	Curriculum Development and Research Centre	Kenya
William S. Warren	Curriculum Development and Research Centre	Kenya
Mary Jane Neuendorffer	EDC	U.S.A.
<u>Visitors</u>		
Jedidah Gituku	Curriculum Development and Research Centre	Kenya
John Mandu	Curriculum Development and Research Centre	Kenya
Bernard Zubrowski	EDC Science Educator Siriba T.T.C.	Kenya

REPORT OF WRITER'S WORKSHOP

See enclosed Report: Status of Manuscripts

Several things emerged clearly from this workshop.

1. It was clearly as productive a workshop as has been held in this Program.
2. It was too easy to resolve difficulties by participants having to go home. This applied to S.E.s as well as counterparts.
3. Mechanisms of selection have to be improved to ensure that only people who can either contribute or learn, participate. Suggestions to improve this situation are enclosed with this report.
4. It was clear that each country in the program has a tendency only to consider its own needs. This situation is more apparent with some countries than with others. It is also clear that local personnel from each country are influenced by the local EDC personnel. It is good both for local and EDC personnel to exchange ideas with other centres. In future it could be considered that the Program Director attend such meetings, both to familiarise himself with the degree of differences of philosophy from country to country, and also to attempt to forge some degree of agreement.
5. Examination of the manuscripts will show that this workshop did development work as well as writing. As the action proposals for each manuscript show, some of this development work was written in and everyone felt that it required no testing. Other manuscripts do require further testing.
6. An examination of manuscripts from different centres will reveal a great difference of approach. Some of these differences reveal valid country to country differences. Others simply reveal differences of personalities amongst S.E.s. Some of these differences are tolerable, others are not. This is another area where Program lead is necessary.

7. a) Mechanics of all this should be made as soon as possible.
- b) EDC should decide whether they should be published or printed.
- c) EDC should decide where this is done.
- d) EDC should decide when this should be done. EDC will have to respond to Centre's requests as to when they want printed materials.

Recommendations:

1. Future workshops should be no bigger than this one.
2. Future workshops should be held at least 50 miles from the home of any participant. And should be away from all big cities.
3. Individual participant's schedules should be such that they come, do their work and leave.
4. If any participant has given his full contribution (apart from the Program Director) it is physically impossible to stand the pace for more than two weeks.
5. Local secretarial staff should be used.
6. An artist should be present.
7. Following this conference Mary Jane should be given more authority: to push existing manuscripts along. To do this she might need:
 - a) Layout help
 - b) Art help
 - c) Better photographic backing from EDC photographic laboratories. They can do better.
 - d) The right to initiate all correspondence on these manuscripts.
 - e) The right to see all correspondence initiated by Newton on these manuscripts.
8. For convening further conferences of this sort:
 - a) Someone at Newton, Mary Jane with Bob, should keep a close eye on all writing. When they think a sufficient bulk has built up, they should initiate another workshop. Centres not involved will be informed of this workshop. But the only criteria for attendance should be ability to contribute or to learn. Newton should choose the person most involved in the work to head up the sub-group. He should have final selective powers.

- b) This format for a workshop could also be ideal for development. Many ideas for further development arose from the discussion of units that were being worked on. Newton could seed such a conference with scientists experienced in the Program. Not many - and the brief should be clear. They are there to keep existing manuscripts honest, and should have been involved in these manuscripts before they came. They are there to see how existing manuscripts could develop into new units. They are there to initiate new units. Outside input should be kept low so that SEs dominate. This is to assure that SEs will actively participate in all new ideas.

17th June, 1968

Status of Manuscripts

Writer's Workshop: Nairobi. June 3 - 16, 1968

Balances

Working group Walton, Godfredsen, Christiansen, Lapp, Savage.

Manuscript Lower Primary: Savage to be responsible further work. Before August.

 Mid Primary: Christiansen and Lapp to work independently. Should get together before August to share experiences and decide on further action.

 Upper Primary: Godfredsen and Lapp to work independently. Should communicate and share experiences before August when they should decide on further action.

Buds and Twigs

Working group Elstgeest, Cole Kasirye, Banda

Manuscript Teacher's Guide

- a) Rewritten and final edited.
- b) Photos needed, to be taken at CDRC Nairobi Centre and sent to Mary Jane in Newton.
- c) Originals of drawings, plus 5 new drawings to be sent to Mary Jane by Norman Cole.
- d) Final check on finished edition to be made by Elstgeest.

Bulbs and Batteries

Working group Lapp, Savage, K'Opiyo, McFadden, Walton

Manuscript Teacher's Guide

- a) Words in final edited form. Will use photos already taken at Kano and Nairobi.
- b) Savage to be responsible to work with Mary Jane to get this out.
- c) Art work needs to be redone.

Chicks

Working group Godfredsen

Manuscript Teacher's Guide

- a) Words modified
- b) Glossary added
- c) Godfredsen has drawings
- d) EDC has negatives of photos

- e) Mary Jane to discuss this with Bob Carlisle and report back to Godfredsen.

Growing Seeds

Working Group

Elstgeest, Cole, Kasirye, Banda

Manuscript

Outline only. Further discussion and trial to be done before writing.

Mosquitoes

Working Group

Godfredsen, Dyasi, Banda, Savage, Bassett.

Manuscript 1

Teacher's Guide

- a) Words. In final edited state.
- b) Pictures to be taken have been outlined. Dyasi responsible for taking these and working with Mary Jane on final layout.
- c) Mary Jane to get photos of mosquito stages from EDC.
- d) Godfredsen is trying the typed manuscript with teachers. He must be responsible for getting feedback to Dyasi.

Dyasi has the responsibility for this manuscript.

Manuscript 2

Pupil's book

- a) Words only by Savage.
- b) Suggestions from Bob Francis that he will write a book similar to "Chima" or "The Water Book".
- c) Francis responsible for pupil's book. If he has not taken action by August, Savage will reassume responsibility.

Pendulums

Working group

Lapp, Savage, Walton

Manuscript 1

Teacher's Guide

- a) Words in final edited state.
- b) Pictures at EDC and with Lapp.
- c) Small amount of art work to be done.
- d) Lapp to be responsible to work with Mary Jane on final layout.

Manuscript 2

Teacher's background group

- a) Words and drawings dummied up in booklet form for trial.
- b) Christiansen to be responsible for further trial, revisions, and work with Mary Jane and others to get into final state.

Sound

Working Group

Lapp, Savage, Walton

Manuscript

Teacher's Guide

- a) Savage to be responsible getting trial draft out of this workshop.
- b) Lapp to be responsible testing manuscript further, getting photographs, and working with Mary Jane and Savage to get out final edition.

Time

Working Group

Walton, Savage, Lapp, Christiansen

Manuscript

Teacher's Guide

- a) Separate sections to be written at this workshop by members of the group.
- b) Savage to be responsible for drawing these together, and feeding to Mary Jane.
- c) Lapp to be responsible for further trial and revision of the manuscript.

Playground

(Note: Not really a part of the workshop)

Working Group

Walton, Savage

Manuscript

- Teacher's Guide (4 sections) to be part of Lower Primary.
- a) In final edited form. Format decided. Layout begun.
 - b) Bill Walton to be responsible for getting new knot pictures to Mary Jane immediately.
 - c) Mary Jane to see that layout is completed, have this offset printed, and hopefully have it ready for Teacher Workshop in Ghana beginning 20th July.

16th June, 1968.