DOCUMENT RESUME

ED 071 965 SO 005 203

TITLE	Program Strategy in Education and Human Resources: Fiscal Year 1973-1974 Revised Edition.
INSTITUTION	Agency for International Development (Dept. of State), Washington, D.C. Office of Education and Human Resources.
PUB DATE	Aug 72
NOTE	63p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Developing Nations; *Educational Economics; *Educational Strategies; *Educational Technology; *Human Resources; Manpower Utilization

ABSTRACT

This program strategy in education, revising and updating the earlier version of June 1971, focuses on strategic aims, plans and efforts in four areas concerning education and human resources. Emphasis is upon specific strategies for the four priority problem areas covering educational technology, non-formal education, educational finance and human resources. For each area information is included on the problem statement, development potentials, strengthening capabilities of the United States and developing countries, future directions and prospects, and resource allocations. In addition, information is given on the background, definition of terms, purpose, and function of the Technical Assistance Bureau and the Office of Education and Human Resources. Lastly, externally determined program activities concerning information transfer for development are discussed. (SJM)

PROGRAM STRATEGY
IN EDUCATION AND HUMAN RESOURCES

FY 1973-1974

Office of Education and Human Resources
Bureau for Technical Assistance
Agency for International Development

AUGUST 1972

AGENCY FOR INTERNATIONAL DEVELOPMENT

Technical Assistance Bureau

Office of Education and Human Resources

Program Strategy in Education and Human Resources

FY 1973 - FY 1974

May 26, 1972
Revised
July 24, 1972

Technical Assistance Bureau

OFFICE OF EDUCATION AND HUMAN RESOURCES

Program Strategy in Education and Human Resources

FY 1973-74

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OFFICE OF EDUCATION AND HUMAN RESOURCES

I. Introduction

This program strategy in education revises and updates that of June 1971. Although it covers essentially the same areas of activity, it deals more with strategic aims, plans and efforts, and somewhat less with tactics - specific projects and actions. The latter will be spelled out in some detail in the program submission.

However, even the program submission will have to be indicative rather than definitive. The reason for this is that the activities of the past year (longer in the case of educational technology) have been designed primarily to provide concepts, knowledge and experience upon which to set our course for the next several years.

A rigorous review and evaluation of all our projects in educational technology is scheduled for this summer and fall. From this, we expect to derive insights with regard to additional needs in technical assistance, research and institutional development.

Our one major project in non-formal education has been in operation for only a year. We shall be reviewing in June the results of nine studies which are in progress by the Michigan State University. However, the summer of 1972 will be a period of intense activity, and it may not be possible to fully define our program in this field until September or October.

The situation is substantially the same in educational finance and measurement. While the Harvard project is showing great promise, its efforts at conceptualizing and defining methodologies and research requirements will not have fully matured for perhaps another six months.

This is not to suggest that we are not in position to lay out our strategic plans or to indicate reasonably specific program actions. It does indicate that we are hesitant at this time to make final judgments about project activities which should have priority, in view of the sharp limitation of resources allocated for education and human resources development.

II. Background

The Office of Education and Human Resources completed its key problem analysis in May 1970, and the analysis was approved by the AID Technical Assistance Executive Committee in July 1970.

The key problem identification process took place over a period of a year, in consultations throughout the Agency, with external authorities and with LDC educational leaders. Scores of problems were considered, seven of which were documented for consideration of the TAEC. Three of the eight were judged by the TAEC to be of the highest priority for the LDCs and AID. These were educational technology, non-formal education and educational finance and measurement.

Four of the seven areas were excluded because limitations of resources made sharp concentration necessary. It is interesting, and perhaps significant, however, that after two years several of these four areas have emerged as among the highest priorities for both LDCs and development assistance agencies: education and employment; enhancement of the role of women in development; the role of the university in development; new emphases on teacher education.

This problem identification and selection process was the first phase of our general strategy for contributing to educational development.

The second phase of our strategy was to prepare Action Programs and Work Plans for each area, in consultation with internal AID Task Forces and with the advice of external consultants. The rubric for each Action Program and Work Plan in each problem area is as follows:

(1) statement of the problem (not AID's problem);

(2) identification of major obstacles to its solution;

(3) examine extent and ways LDC's are trying to cope with the problem;

(4) present and/or prospective role of AID;

(5) present and/or prospective role of other development assistance agencies;

(6) human and organizational resources available to AID;

(7) involvement of Regional Bureaus, AID Missions and LDCs;

(8) design significant research efforts;

(9) identify or create field pilot or experimental projects, and

(10) encourage and assist in establishment of full-scale field projects.

Although the first two phases of this general strategy continue to evolve, major emphasis is now shifting to the third phase: fostering significant activity in research, experimentation and implementation of projects in the key problem areas by AID, the LDCs and other assistance agencies. This involves:

(a) Mobilization of resources through which to develop a better understanding of the key problem areas, and to identify and test the various problem-solving options.

(b) Facilitating the exchange of such an enhanced knowledge base among those concerned, including the official and intellectual communities of the LDC and donor nations, the multilateral assistance agencies, and a wide range of interested individuals and institutions.

(c) Rendering assistance, directly by AID or by institutional intermediaries, to host country problem-solving efforts in the key problem areas.

The following program strategy submission indicates our progress to date and the principal efforts envisaged for the next two years.

III. Definitions of Terms

The terminology of development tends to be ambiguous; there is not even a general concensus as to a proper definition of development itself.

This observation is particularly true in the terminology of education. We have therefore undertaken to define the principal terms used in this submission in an attempt to establish a better understanding of our intended meaning:

A. Strategy: A general plan of action designed to achieve a defined objective with the resources available, or to gain a more advantageous position from which to seek that objective.

B. Objective: To assist the developing countries in providing more useful education and information, for more people, at costs the countries can afford to pay.

C. Education: Any form or mode of learning which enhances the quality of life of the individual and/or enables him to contribute more effectively to his society.

D. Educational Technology: Devices for delivering informational and educational materials, and a set of methodologies for organizing the content and conduct of the teaching and learning process.

E. Non-Formal Education: All forms of purposefully conducted education outside the formal, graded school system.

F. Educational Finance Measurement: The process of identifying and evaluating alternative methods of financing education, and of measuring the efficiency of an educational system.

G. Education Sector: Those activities which are conducted for the primary purpose of providing learning opportunities.

H. Human Resources: In a humanistic sense, human resources are people - everybody. However, from a development standpoint, human resources can more properly be defined as peole who have the knowledge, skills, motivation and opportunity to contribute constructively to their society, or who have the potential for acquiring these attributes.

IV. Purpose, Policy and Resources of the Office of Education and Human Resources

A. Purpose and Policy

The primary purpose of this Office may be briefly stated as follows: to provide professional leadership and technical assistance to the other elements of AID in the design and conduct of education and human resource program activities.

However, an important secondary purpose of the Office is to contribute to the knowledge and understanding of the world community concerned with education in the developing countries, development assistance agencies, intermediary assistance institutions and the LDCs.

To serve these purposes the Office considers that the most important of its functions are to:

1. Provide professional leadership within AID for identification and definition of a limited number of key problems in education and human resource development in the LDCs.

2. Mobilize AID staff and external resources (through consultants, GTS contracts, research and institutional development grants) to undertake investigation, experimentation and project implementation in the selected key problem areas.

3. Establish effective linkages through the Regional Bureaus and Missions with LDC leaders and institutions responsible for education and human resource development. Make resources available to cooperate with them in defining their educational priorities, resources and constraints, and in developing strategies or major elements of strategies for educational development.

4. Establish effective linkages with other bilateral and multilateral assistance agencies to assure exchange of information and ideas on education and human resources development problems and programs, and to coordinate activities to the maximum practicable degree.

The general policy of the Office is to concentrate its attention and efforts upon a limited number of critical problems for which a solution, partial solution or even a significant degree of alleviation would represent a substantial gain in national development. In keeping with this policy, we have identified three critical problems as being: (1) more effective use of educational technology, (2) development of non-formal education for out-of-school populations, and (3) identification of alternative building designs and reduction of unit costs of higher quality education.

However, the term "human resources" is considerably broader than these three key problem areas and must be dealt with as a multi-sector problem. We are now in the process of defining it in that way, and our progress will be indicated in a later section of this paper.

This cluster of interrelated problems is central to education and human resources development in every LDC; the LDCs are receptive to assistance from the U.S. in these areas; and, although the U.S. does not have definitive answers to these problems, its professional and technical knowledge of them compares favorably with that of any other country.

In FY 1972, we phased out support for a number of important but, for us, marginal activities: library development, book procurement improvement, Teach Corps activities, science education, and self instructional techniques for teachers of English.

Consequently, essentially all of the staff and financial resources contemplated by this program strategy will be invested in progress on these four problem areas.

B. Staff Resources

To provide the services envisaged in this submission, the Office is substantially better situated now than it was a year ago:

Direct Hire Staff: By the beginning of FY 1973, we will have nine professional staff members, as against six a year ago. With the phasing out of lower priority projects, a higher percentage of staff time can be devoted to the key problem areas.

The largest has been in educational technology, where we have moved from one professional staff member to three. This is in recognition of the fact that, thus far, our investments in that area are much larger than in the other two. The approximate allocation of our staff resources is as follows: Program development and direction 1.5; Educational technology 3; Non-formal education 1.5; Educational finance and measurement 1; Human resources development 1.5; Information materials, media and management .5.

This, however, is an incomplete picture of the [illegible] staff resources of AID/W. There are twenty education [illegible] the Regional Bureaus (LA - 5; Asia - 5; Africa-7, and SA - [illegible]. Our relations with them are reciprocal: [illegible] provide them, upon request, with professional and technical advice and assistance on programs for which they have responsibility; they, in turn, provide us with assistance in screening, selecting and evaluating projects and program emphases, and in facilitating contacts of our staff and contract institutions with field Missions and IDCs. Moreover, there are now some 65 education officers in 35 AID Missions in the field. Increased interaction with them will be proposed in Section X.

Finally, a very large fraction of the total AID staff, from the Administrator down, have both professional competence and wide experience in [illegible]cational development.

Consultants: We now have 6 active consultants and 2 in process of being appointed. In contemplation of more opportunities for technical assistance to the developing countries, this group will be expanded and given better balance.

In FY 1973, we shall experiment with utilization of consultants in a group for three month period. This "summer seminar" of five consultants will be in educational technology, but if it proves productive, we may propose extending it to the other key problem areas.

Contract and Grant Personnel: By far the largest increment to our resources during the past year has derived from our technical services contracts, and from an institutional development grant. For example, there are now over twenty people significantly involved in our non-formal education project at Michigan State, although we fund only a small fraction of the number. By appropriate modification of our contracts and supplementation of 211(d) grants, this resource can be increased even farther.

A two day seminar involving all contractor and grantee institutions was conducted in March 1972. This proved so productive that it will be continued annually.

External Advisory Group: Such groups have been formed and function in each key problem area. These have proved particularly useful and can be varied simply by invitational travel procedure.

Internal Task Forces: Each key problem area [illegible] disciplinary Task Force drawn from within the Agency.

Inter-Bureau Coordinating Committee on Education: This Committee is composed of the senior Education Advis[illegible] Regional Bureau and the staff of the Office of Educa[illegible] Human Resources. The Director of the Office serves as chairman. This Committee has proved highly useful in screening, [illegible] and evaluating all inter-regional projects, as well as [illegible] lating general agency policy in education.

Conferences and Seminars: These have been [illegible] successfully in all the key problem areas.

In short, to further develop and implement our general strategy our staff has a[illegible] doubled and our contractor resources have increased by at least ten-fold in the past year.

V. General Strategy

A. The Problem: to provide more useful education and information, for a great many more people, at costs a developing country can bear.

B. Strategy

As defined earlier, our general strategy is two-fold: (1) to assist the developing countries in finding better answers to their problems in key educational areas, and (2) to gain a more advantageous position from which to help them [illegible] effe[illegible]vely in the future.

During the past two years this Office, through its staff, consultants and institutional contractors has provided technical assistance or consultation to Regional Bureaus and in some twenty of the developing countries. During the same period we have funded twelve U.S. institutions to provide technical services or build a better knowledge base in all our key problem areas and in other activities. (Stanford University, Harvard University, Michigan State University, Florida State University, George Washington University, Massachusetts Institute of Technology,

Academy for Educational Development, National Science Foundation, National Education Association, American Library Association, Franklin Book, Inc. and the U.S. Office of Education.

We believe both elements of this strategy are sound; but they have not been sufficient and their relationship to each other must change. One of the insufficiences has derived from the sheer limitation of funds. Another has resulted from inadequate knowledge of the key problem areas. A third, resulting in part from the other two, is that a very large fraction of our efforts has been concentrated in the United States. Our strategy for the future is that as rapidly as possible the focus of action will be shifted to the developing countries themselves.

Our experience of the past two years, coupled with analytical studies by other assistance agencies and the presentations of the LDCs, has reinforced our judgment of the relative importance of the key problems selected. All three have met with a strongly affirmative response by many LDCs. One or more of the priorities we identified has been selected for special attention by many other bilateral and multilateral assistance agencies.

Within AID, there has been a perceptible shift of education programs to the key problem areas. The interest, understanding and readiness to work in these areas by the various components of the Agency are basic ingredients in our strategic planning for progress in these fields.

One of the critical factors in any strategy is that the resources available must bear some reasonable relationship to the goals to be achieved. During the past two years our funds, though limited, have been reasonably adequate.

By concentrating our efforts in three areas relatively new to AID (and to other development assistance agencies) a period of conceptualization and investigation was required. Few institutions or individuals were available with knowledge of how these areas should be approached. Moreover, the LDCs were even more lacking in knowledge, or even awareness, than ourselves.

But these conditions are rapidly changing. Useful knowledge in each of the key problem areas is growing; the interests of many LDCs have been kindled and opportunities to assist them are multiplying. As a consequence, implementation of our strategy for the key problem areas will require an increasing investment by AID.

This does not necessarily imply a large increase in <u>inter-regional</u> funds for education and human resources, though some increase is indicated. It does imply that the Agency should be prepared to encourage, support and fund a variety of well-conceived research, institutional development and technical assistance projects in the key problem areas. Otherwise, the resources available measured against the problems to be solved will be insufficient to produce significant strategic gains.

VI. Education Sector Analysis and Strategy

The current concept of sector analysis as applied to education is relatively new and not yet fully understood. However, over the years AID has made many less rigorous and systematic efforts at assessment of educational systems, priorities and strategies for individual countries. We are, therefore, not entirely without useful experience in turning to the new concept of global and country sector strategy in education.

The few recent analyses which have been made are primarily aggregations of incomplete quantitative data and more or less subjective judgments regarding quality, relevance and costs.

The largest number, perhaps fifteen, have been made by UNESCO teams at the instigation of IBRD. Even these have been made more with a view to determining the wisdom of a development loan than as a basis for strategic planning and action. Nevertheless, we have established links with UNESCO and IBRD so that we may pool our knowledge and, perhaps, undertake joint sector analysis in specific countries.

The experience of the United States does not yield a great deal useful to the developing countries, since the U.S. does not have a national system of education. Indeed, we do not even have state systems except in a fragmentary and haphazard way. Although we have always had school "systems" they have seldom been examined from a systems analysis point of view.

There are several valid reasons for this. The most important "outputs" of the schools are extremely difficult or impossible to "measure." The real outcomes of the learning experience are usually not known for years - perhaps decades - after the experience has occurred. Cognitive learning can be tested only approximately and affective learning almost not at all.

Current efforts in certain LDC to measure the relevance, quality, and cost-effectiveness of education by subsequent employment and income tend to overlook the fact that these factors are more a function of the job market than they are of the educational experience.

Education is probably less of a sector (or system) than most other areas of activity denoted as sectors. It is first and foremost a highly social and political rather than economic institution. Virtually all the basic policies in education are determined externally, usually by people having few professional qualifications in the field.

Education as officially defined and conducted is only one important piece of a vast and complex apparatus for learning. Recent research seems to demonstrate that out-of-school learning experience conditions learning outcomes in-school more than does the in-school experience.

Perhaps most important of all, education assumes real and visible meaning only at those points where it intersects with other "sectors" - in the performance and behavior of individuals in situations which have nothing whatever to do with "education." In other words, education is a process, not a product.

However, education can be defined as a sector and much value may be derived from sector analysis which provides better facts and analyses as a basis for decision and action. There are many important problems it can help solve without necessary reliance upon such methodologies as linear programming and input-output matrices.

Our strategy for formulating a global sector strategy for education consists of the following elements:

1. Learning what we can from the past experience of AID, UNESCO, IBRD and other development assistance agencies that have done sector analysis in education.

2. Learning what we can from sector analysis and strategy efforts in other fields, such as agriculture. We have arranged for joint consultations with the professional educators and agricultural economists at Michigan State University in early June. We shall examine carefully the sector analyses in agriculture that have been done in Brazil, Colombia and other developing countries.

3. Concrete conceptualization of the elements which should enter into education sector analysis and study of feasibility and validity. In doing this we shall consult expert systems analysts as well as educators.

4. Hands-on experience in three or four countries to test our concepts and techniques.

5. Invest in research and development which seem reasonably likely to produce new knowledge and methodology.

We do not see formulation of global sector strategy as proceeding separately from country sector strategy. Although they are different, they are inter-related and it would seem sensible to test and validate them against each other.

Given the emphasis which the Agency properly is giving to sector analysis and strategy, and the comparatively primitive state of the art, we do not regard this as an area which can be developed entirely through Agency Staff and experience alone. We therefore propose to act in concert with PPC and the Regional Bureaus in mobilizing the necessary external resources.

VII. Key Problem Areas - General

As previously indicated, experience thus far indicates that the choice of key problem areas in education was sound. Indeed, recognition of the critical importance of these areas has grown more rapidly than we could have envisaged two years ago.

However, with experience, our perceptions of their elements and dimensions have changed significantly. Educational technology has broadened in conception and scope; both software and hardware systems have continued to improve and country projects of potentially great importance are increasing in number.

Non-formal education has taken on substantially more importance as the Agency has re-defined its assistance goals of helping improve the quality of life for people in the developing countries. The studies being developed by Michigan State University for AID indicate a variety of concepts and operational possibilities which were not fully perceived a year ago. With the growing recognition of LDCs that development means not just growth of GNP but more employment (broadly defined), better income distribution, better health, nutrition and more effective population control, non-formal education is seen as a key element in achieving all these things. In fact, it may well be that, as in educational technology, more will be expected of non-formal education than it can deliver - at least in the immediate future.

Educational finance and measurement continues to be a crucial problem in all forms of education, and in many ways is the most difficult to conceptualize or act upon. Educational finance is an overwhelmingly political as well as educational problem. Analytical techniques and instruments are slowly being designed or improved. Perhaps the greatest innovation in this problem area would be for the LDCs to use effectively the knowledge and instruments which already exist.

But the greatest single difficulty we have encountered is the making of a practical, working synthesis of the three key problem areas. They obviously are not discrete problems but a cluster of closely inter-related problems. Thus far we have found no single country or field project in which it has been possible to deal with them as integrated elements of a larger problem. Perhaps Korea, El Salvador and Ivory Coast will prove to be opportunities for this kind of unified effort.

A primary element of our strategy for FY 1973-74 will be to find or help create situations in which our knowledge in the three areas can simultaneously be applied and enhanced.

VIII. Key Problem Areas - Specific

We have developed for each of the key problem areas a relatively more specific strategy which, we believe, is consistent with our overall strategy in education. However, these strategies are not fixed and will continue to evolve from year to year as new knowledge and experience indicate. In each case there are four pivotal elements: (1) the interest, knowledge and commitments of the LDCs, (2) the state of the art, (3) activities of other assistance agencies, and (4) resources available to AID.

Likewise, in each case, there are three strategic aims: (1) strengthening LDC capabilities, (2) strengthening AID capabilities, and (3) facilitating and supporting interaction between them in solving problems.

A. Educational Technology

1. The Problem: To develop and apply traditional and new instructional devices and methodologies to achieve better quality of education for more people at acceptable costs.

The educational objectives sought are of two types: (1) education for developing general intellectual capacities and skills (as is typically the case in schools); (2) education for achieving certain social development goals - for example, that required for the effective implementation of health, nutritional, family planning, and agricultural development programs.

2. Potentials for Development: Evidence is accumulating that communications technology does have very important potentials for development. Used effectively, educational technology can improve education in schools at acceptable costs, reduce the isolation of rural populations, reach large numbers of people with useful learning experiences, convey modernizing ideas and build awareness of and participation in the achievement of national goals. But there is no evidence that such things can be done instantly or even quickly. The great promise of communications technology lies in the prospect that these things can be done at all.

This observation is not a pessimistic assessment. Educational technology deeply involves complex physical equipment and even more complex factors in human learning and social behavior. Our knowledge of how to establish purposeful

links between them remains essentially primitive and experimental. However, during the past decade, very substantial progress has been made in communications "hardware," and research has thrown significant light on modes of learning and how these are reflected in behavior. While no dramatic breakthroughs can be anticipated at this time, it is reasonable to expect that the next decade will produce important new technology and more efficient ways of applying it in achieving development objectives.

Within educational systems, educational technology has demonstrated, in a few places, that it can be a powerful instrument for educational reform, introducing new educational concepts, more relevant subject matter, new approaches to teaching and learning and new forms of management of educational resources.

Outside the formal school system, communications technology has a great potential for reaching large numbers of people with useful learning experiences with regard to such "quality of life" problems as agriculture, health, nutrition, family planning and community action.

One great potential of this technology is that it can reach people where they live and work; it can use as one of its vehicles the art, music and drama of the national or regional language and culture; it can make learning more relevant, useful and enjoyable.

But the barriers to the realization of this potential are formidable.

There are only sketchy and inconclusive data available on the costs and effectiveness of communications technology for development. We have no tested models in the U.S. or in other developed countries for export and application. We have little experience with large systems applications which demonstrate effectiveness and economies-of-scale. Technological breakthroughs which would significantly increase effectiveness or reduce costs are unpredictable. Many developing countries are weak in two of the crucial elements, effective application of new technology and effective management of new systems.

Nevertheless, the options available for educational development are sharply limited.

The present education systems of the LDCs are clearly failing in providing the kind and quantity of education and information necessary to achieve an acceptable rate of development. Of the alternatives available, educational technology appears one of the most promising in helping the LDCs achieve their educational and informational goals.

There is a growing number of countries which have made, or are making, firm, long-term commitments to educational technology as a major instrument of development, for both in-school and out-of-school applications. Among these are Brazil, El Salvador, Colombia, Kenya, Ivory Coast, Thailand, and Korea. The experience of these countries will be crucial in establishing a knowledge base on which other developing countries can build.

AID is participating in all these pioneering efforts.

3. Strategy: Our strategy in educational technology is based on the following set of principles:

(1) Focusing on pilot projects which may contribute to major breakthroughs in educational systems;

(2) Providing qualified professionals to help make these pilot efforts effective.

(3) Assisting in the development of programs that are problem-oriented, not communications-media-oriented. The technology is designed to work toward solving key problems rather than searching for uses of available technology;

(4) Assisting in the development of professional competence on the part of LDC personnel, with particular stress on systems-oriented project planning, project administration, quality content, careful evaluation, and planning for continuing innovation;

(5) Promoting and utilizing cost effectiveness studies of multi-purpose communications systems.

If educational systems which make effective use of instructional technologies are to come into being, they must meet certain exacting criteria, among which are the following:

(a) a systematic, integrated approach to achieving the objectives of the system, one which takes seriously into account the interaction of the crucial elements in a system which affect the attainment of those objectives;

(b) excellence in the planning of every key element of such systems;

(c) a system design in which continued evolution is inherent, based on empirical measures of learning effectiveness, and

(d) objective evaluation and assessment of comparative effectiveness, institutional viability, and cost.

Our overall effort, then, is essentially a research and development program, directed toward assisting the LDCs to devise, try out, perfect, and evaluate systems which hold significant promise.

In order to provide such aid, we will continue to act at five levels:

- Institutional development, both in the LDCs and in U.S. institutions with the capacity for training and research.
- Support of research and of evaluation.
- Preparation and distribution of basic information on educational technology concepts and practice.
- Development of improved strategies for educational communications in development.
- Stimulation of and assistance to key field projects.

4. Strengthening U.S. Capabilities: Reference has already been made to the increase in the professional staff of TA/EHR in this key problem area. A better measure, however, of increasing AID capability is found in the fact that the Agency is now supporting 37 projects in communications and educational technology for a total investment of over $21 million, and involving nine U.S. institutions and one multilateral agency. This contrasts with 14 projects for a total of $4.5 million in 1970. (These projects are discussed in detail in the 1972 AID report to the Congress on Section 220 of the Foreign Assistance Act).

Here we shall deal only with development of U.S. knowledge and institutional capability managed by the Technical Assistance Bureau, or with Regional Bureau projects in which TA/EHR and its contractors have an important advisory role.

The Academy for Educational Development

AID has three contracts with the Academy for Educational Development, to achieve a variety of objectives in the field of educational technology:

Project 1 involves:

(1) The establishment of priority areas for scientific research and development on the uses of educational technology for application in developing countries;

(2) The assessment of the educational effectiveness and cost implications of various alternative communications systems including those using satellites, when applied to developing areas; and,

(3) The development of strategies for the application of electronic communications systems to areas such as agriculture, nutrition, population and community development.

These studies are now nearing completion and the results of all of them will be available early in 1973.

Project 2 involves:

(1) Preparation of a handbook on educational technology;

(2) Production of a film on educational technology in the LDCs.

(3) Design and conduct of several seminars/workshops on educational technology within developing countries; and

(4) Development of a Washington-based Information Center on Instructional Technology for Development.

Handbook - The handbook is designed to serve as an introduction to educational technology for administrators in developing countries and A.I.D. Mission personnel who wish to investigate the question of how educational technology might be helpful in solving specific educational problems in which they have an interest.

Film - The film's purpose is to encourage policymakers in developing countries to investigate the possibility of harnessing technology (particularly classroom television) to education in order to improve the quality and effectiveness of instruction. A main point made by the film, and the idea behind its production, is not only that instructional technology can improve learning, but that certain countries may require something as exciting as TV to arouse interest in basic educational change as against mere enrichment.

The handbook and film have been translated into French and Spanish and have been field tested in cooperation with the Southeast Asia Ministers of Education Council Later this year they will be given similar trials in Latin America and Africa.

Project 3 involves:

Evaluation of the educational and cost effectiveness of the El Salvador ITV Program, and in addition, a record and analysis of its development. From this evaluation it is hoped that measures can be determined which are needed to improve and benefit first the El Salvador project and its expansion, and second, the planning of educational technology applications in other A.I.D. programs in other countries.

This project, begun in July 1968, is entering its final phase during which there will be a fourth year of testing and data gathering followed by the preparation of analyses and recommendations of value to other countries interested in utilizing educational technology for national educational reform.

In order to take advantage of the professional skills and knowledge of other institutions in carrying out these projects, the Academy has entered into sub-contracts with the Massachusetts Institute of Technology, George Washington University and the Abt Associates. It has also relied heavily upon experts from Harvard, Stanford, Drexel and other institutions.

Florida State University

Under the authority of Section 211(d) of the FAA, AID made in May 1971 a five-year grant of $1 million to Florida State University to provide a major developing country focus within the FSU Center for Educational Technology (CET). The goal of the Center is to maintain a position in the forefront of the development of educational technology and of its application to educational problems faced by developing communities and nations around the world. Educational technology at the Florida State University includes: planning, design, and implementation of complex instructional systems and of educational management systems; educational measurement and evaluation; design and development of multimedia and self-instructional materials; and planning of instructional facilities and the allocation of educational resources.

Although CET is based on the Florida State University campus, it is establishing links with institutions in developing countries for research, training, experimentation and application of instructional technology. The philosophy of the Center (and of AID) is that there is no substitute for engaging the problems of educational development in partnership with the developing countries, in the environment where the problems occur.

In keeping with this principle, the CET has formed an International Advisory Panel, made up of outstanding educators and communications authorities from the United States, Europe and the developing countries. This Panel is convened annually to review the Center's activities in educational research and technology and to provide timely information and advice on educational problems facing developing countries. The Panel was convened for the first time in July 1971 and held its second annual meeting April 10-11, 1972.

Although managed by the CET, the Panel provides valuable advice and guidance to A.I.D. with regard to the evolving potentials, problems and experience with instructional technology worldwide.

Stanford University

The goal of this research project is to advance the state of knowledge on the comparative cost-effectiveness, and on the overall educational effects, of systems using different instructional technologies which vary in their cost and in their administrative complexity. It will emphasize the study of systems which are relatively low in cost and in administrative complexity.

It is intended that the results would be useful to the decision-making process in:

(a) AID and other external assistance agencies, in determining what levels and kind of support is warranted for projects involving various instructional technologies in the less developed countries;

(b) Less developed countries, in deciding what uses to make instructional technology, and

(c) Researchers and research-sponsoring agencies, in deciding upon key questions that still need answering, applications that need testing, and methodologies that are promising for studies of instructional technologies in less developed countries.

Field research and experimental work is being concentrated in Mexico. However, it will deal with uses of television and its lower cost alternatives outside Mexico. Among those of special interest to developing countries:

(a) Television as a vehicle of educational reform, as in El Salvador, Samoa, Niger, and now the Ivory Coast.

(b) Television as a device to extend the school beyond the boundaries of classroom and campus -- as in Mexico, or combined with correspondence study, as in Japan, Bavaria, Poland, and the "Open University" of the United Kingdom.

(c) Radio as a device to extend the school -- as in Kenya, Japan, and Australia, where it is combined with correspondence study, and as in Mexico, where it is not.

(d) Radiovision as a device to supply needed content to schools or to teach out of school -- as in Malawi, Central African Republic, Niger, and Senegal.

(e) Radio as a device to provide needed additional content for schools -- as in Thailand or Zaire.

The research will produce several kinds of reports:

(1) The telesecundaria in Mexico.

(2) The radioprimaria in Mexico.

(3) Instructional television as a vehicle of educational reform in the developing countries -- combining evidence from Samoa, Niger, and El Salvador.

(4) Instructional television and radio as devices for extending the school -- combining evidence from Mexico, Bavaria, Japan, Kenya, and elsewhere.

(5) Radio and radiovision as alternatives to instructional television -- combining evidence from Mexico, Thailand, and several African and Latin American countries.

(6) The methodology of instructional cross-media comparisons.

(7) The methodology of instructional media case studies.

(8) A framework for cost-effectiveness analyses.

(9) Economic aspects of instructional television as a vehicle of educational reform. (Must await cost analyses)

(10) Economic aspects of lower-cost alternatives to instructional television. (Must await cost analyses)

5. Strengthening the Capabilities of the Developing Countries: There is no sharp line of demarkation between strengthening the capabilities of U.S. institutions and strengthening those of the developing countries. As has already been pointed out, effective interaction between them is essential if an improved capability is to be achieved in either.

The rationale used for treating them separately is the location of the primary institutional base for action. This section deals with A.I.D. supported activities in which the main focus of action is in the developing countries, and under the leadership of developing country institutions.

Although A.I.D. has directly or indirectly supported educational technology activities in a large number of countries, those described below are those which are on a substantial scale, give promise of important results and provide proving grounds for the testing of systems which, with modifications, may be effectively applied in other countries.

El Salvador

El Salvador is in the third year of its educational reform, a pioneering effort to rapidly reform the objectives, content, and methods of education, initially at the junior secondary level. Through intensive use of instructional television systematically coordinated with curriculum reform, newly written materials, teacher retraining, and evaluation. As of January 1972, a majority of the nation's junior secondary students (about 60,000) are encompassed by the new system. A.I.D. has provided major assistance, both financial and technical, to this project.

An intensive scientific evaluation of the project is providing information on costs, educational effects, attitudes, and operating problems. While firm conclusions must await at least the completion of 1972 testing, the evidence thus far is that educational change can be rapidly introduced with such a system, that such change does produce significantly more student learning, and that operating costs are moderate and can be borne by El Salvador. It is furthermore clear that evaluation can perform a valuable function in a system of this sort, increasing the recognition of policy makers and operators of both deficiencies and strengths within the system and thereby guiding the process of improvement.

At this point, it is the judgment of El Salvador's educational leaders that an effort to improve the quality of television teaching would likely have high pay-off in further increases in educational productivity. Now that the system is firmly established, this kind of second phase quality improvement becomes possible and can more easily be implemented than in the traditional system.

El Salvador has not yet dealt with the problems attendant to expansion of this kind of system to the much larger population of primary school students and to adults. It is, however, actively examining alternative methods for using the technology to upgrade educational opportunity in both these sectors and initially probably will concentrate on primary school teacher training with television.

The El Salvador project has fulfilled early expectations that it would show how the systematic integrated use of an instructional technology, if carried through with national commitment, can

produce rapid educational change. Beyond this, it has become a valuable demonstration center attracting visits and inquiries from many other developing countries interested in educational reform based on new instructional technologies.

Korea

Korea is engaged in detailed planning for what could become one of the most systematic and complete educational reforms ever undertaken. A.I.D. has assisted in this planning, through a systems planning study conducted by Florida State University and through further financial and technical assistance. The Director of the FSU Center for Educational Technology is serving as senior advisor on implementation of this educational reform program.

Currently, a five-year educational research and development effort is being started, aimed at producing a prototype system in one Korean Province, reaching several hundred thousand primary and secondary school students. The main objectives of the system are: faster progression through the system; gearing of individual progression through the system to individual learning achievement; increase in the number of students handled by an individual teacher; organization of curriculum around "learning modules"; thorough reform of objectives, content, and learning methodology, relating the intended results of education more closely to needs of a changing industrialized society; resulting in a reduction in unit costs per graduate. In the view of the project planners, only such a radical restructuring will permit Korea to afford to service a rapidly growing student population.

The instructional approach will utilize television, teacher retraining, programmed instruction and other methods for individualizing instruction, careful definition of behavioral objectives, and detailed feedback to develop, through criterion testing and revision, a tested complete curriculum of instructional modules. The management system would include the reorganization of classes to utilize a master teacher plus supporting teachers in a way to reduce both the total number of teachers per student and the average salary costs, while through the differentiation of teacher roles continuing to provide quality classroom teaching.

This Korean reform program will represent a landmark effort in the restructuring of education to meet changing needs, budgetary crises, and the opportunities for quality improvement presented by instructional technology.

Brazil

Brazil is beginning a nationwide program of educational innovations making use of the educational technologies. A.I.D. is providing initial assistance to Brazil in the form of training

opportunities for planning educational technology systems and through financial support in a portion of a sector loan earmarked for innovation. The portion of the loan allocated for this purpose is estimated at $2.5 million. However, the total loan of $50 million will contribute to a major reform of the whole Brazilian educational system for both in-school and out-of-school populations.

Of greatest significance is, first, the fact that Brazil has decided that the need for mass education with quality can be met by the effective use of educational technology and, second, that it now has very substantial funds, both its own and those of external agencies to implement that decision.

Brazil is also proceeding with planning an initial R. & D. program for use of a satellite for in-school educational television and radio beamed to the poorest areas of the country, areas that cannot afford trained teachers and which do not attract or hold such teachers as they can afford. The final shape of an experiment and/or operational program using satellite E.T.V. has yet to emerge.

As in all countries, the organization of national, state, and local institutions to undertake this major effort is a first area of effort for Brazil. Substantively, there is the question of the desirability of diverse approaches at this early stage (where experience with different kinds of systems may be fruitful) as opposed to the concentration of intellectual and financial resources on key problems which joint efforts might provide.

In any event, Brazil is committed to using educational technology to provide educational opportunity to a large part of its population not now within the school system. In doing so, it will perforce face many questions of importance to other countries, among them: how to teach without a force of highly trained classroom teachers; how to administer systems over so large and decentralized a nation; how to deal with populations very diverse in background and attitudes; and, how to arrive at optimal technoeconomic solutions for providing communications to poor and remote areas.

Ivory Coast

The most comprehensive systematic use of television as an instrument for both reform and expansion is that which has become operative in September 1971 in the Ivory Coast. During this first year it will be reaching some 20,000 first grade students through a reformed educational system which will utilize television intensively for both classroom instruction in all subjects and for teacher-training.

Over the next 10 years, the entire school population will be encompassed. The Ivory Coast embarked on this system because of its urgent need for upgrading the education and training of the mass of its population in order to continue its remarkable economic growth. It chose a comprehensive system using television in the conviction that such a system could both upgrade quality and increase the availability of education within a short period of time, and, further, that because of its greater instructional efficiency, the cost of producing graduates could be reduced. For example, one analysis shows that the Ivory Coast now must invest seventeen student years of resources to produce one sixth-grade graduate, while the new system may reduce that to perhaps seven years. With attendant savings. Finally, the Ivory Coast's effort is part of a broader attempt to lay the basis for development in all regions of the country, hopefully reducing the rate of migration to Abidjan.

A.I.D. has not played a major role in this project, its contributions being mainly providing technical advice of its staff and consultants to UNESCO and the Ivory Coast. A.I.D. has also committed modest funds for participation in the evaluation phase. However, the possibility of attaining some of these dramatic objectives at a reasonable cost has stimulated major investments from French foreign assistance, the World Bank, several UN agencies, and the German and the Canadian governments. An important aspect of the project is, therefore, the joint participation of a number of assistance agencies with serious interest in the potentials of instructional technology.

This project, because of its size and ambitious objectives, could stimulate a major breakthrough in the state of the art in the systematic use of educational television within schools.

In addition to these major trail-blazing projects, there is a wide variety of smaller but significant activities in which we are involved. Perhaps the most interesting of these is a feasibility study in Guatemala, to make recommendations to the Government of Guatemala on the key issues involved in carrying out an experimental low-unit-cost program of information and education for rural adults. This program is designed to provide the skills, knowledge, and attitudes necessary to increase their economic competence, employability, and participation in the social, cultural, economic life of the nation. It will seek to improve roles as family members in health, nutrition, and agriculture.

The special innovative character of this program will be to test whether communication delivery systems other than those requiring literacy can be used successfully as a means of informing, motivating, and developing illiterate and semi-literate rural adults in Guatemala.

6. Future Directions and Prospects: The rate and direction of development of technology for educational development depends on a variety of factors, many of them requiring the assumption of initiative and responsibility within the LDCs. However, within the valid opportunities presented and resources available to us, we propose to place emphasis upon the following efforts:

Technical Assistance in Project Planning

One of the great needs of the LDCs continues to be for competent assistance in planning projects - in deciding the kinds of systems to which they could reasonably commit themselves, and in implementing such systems.

We propose to help provide the best talent available to developing nations, explore ways to further increase the numbers of people with such skills, and to work toward creating more institutional centers for such expertise.

Information Development and Dissemination

AID will continue to place a priority emphasis on providing information to developing country planners that facilitates their understanding and use of instructional technologies. Thus the AID-funded program which has produced a film and handbook on educational technology, and an information and reference center at the Academy for Educational Development will be continued at least through mid-1973. The further continuance of this activity will be dependent upon the support of other sponsors and users. Meanwhile, the information needs of the developing countries will have to be further assessed. A series of seminars centering on the film and handbook to take place throughout the developing world over the next 6 months will assist in the definition of needs.

It is clear that a network of information needs to be stimulated. The sharing of information among developing countries working with similar systems may be the most important link in such a network. We hope that over the next year a plan can be developed with the United Nations and other multilateral agencies and with other bilateral donors to facilitate the establishment of this kind of network,

Institutional Development

As has been indicated, AID has taken action to increase institutional capacity in the U.S. to assist the developing countries in educational technology.

In spite of these efforts, however, the institutional framework for professional activity in this field is still thin. We would identify three areas where we would hope, working with other assistance agencies, to strengthen the institutional base over the next five years: First, we believe there is a need for a center parallel to that of Florida State with a greater focus on the use of mass communications and on communications theory. Second, we believe there is a need for another center which would concentrate on the practical problems associated with the production of educational materials for the new media; i.e., the production of quality instructional television programs, increasing the instructional power of radio, and mechanisms for making more effective programmed instruction for application in developing country situations.

Third, there is an urgent need for the creation of greater institutional capacities within the developing world. At this point the small, emerging Center for Educational Innovation and Technology (sponsored by the Southeast Asia Ministers of Education Organization) and the O.A.S. Centers in educational broadcasting in Latin America are the only organized attempts to improve the institutional capacities within the developing countries for planning, research and technical assistance in the educational technologies. While linkages between the various U.S. and European Centers in this field, and institutions in developing countries are consciously being sought, the time will soon come when mechanisms will have to be developed to provide support to the developing country institutions directly.

Evaluation

AID has to date placed heavy emphasis on the importance of evaluating key field projects in educational technology. Thus, we have made a major investment in supporting evaluation of the El Salvador project, an evaluation program that is one of the most comprehensive ever undertaken of an educational innovation. Earlier, we funded the four volume series of case studies of the new media in education conducted by the International Institute for Educational Planning and published by UNESCO. It is basic to our approach to the use of educational technologies that policy and practice be guided by objective evaluation of the effects of those practices - evaluation that attempts to maintain a focus on what and how efficiently the individual student is learning on the one hand, and on the other hand the costs of the system.

We will continue to make evaluation an integral part of every such system which we support. We will also continue to try to assess the relative costs and effects of other systems when countries themselves wish to make such assessments. (The Stanford research project is an example).

Research

We differentiate from evaluation a related class of projects consisting of experimental research. The overall aim of these projects is to develop new or improved ways of utilizing the instructional technologies for developing country purposes. The kinds of activities that can be encompassed would range from quite specific research on a particular technique to small scale pilot projects which will test out new systems. To date there has been very little such research directed toward educational technology systems appropriate to developing countries.

However, perhaps the most productive kinds of experimental research are those closely related to a planned or ongoing operational project. Here, where immediate relevance of the project is apparent, funds are likely to be more readily available. For example, AID is making available a certain percentage (usually 5 percent) of its sector loan funding in education for research and development activities, particularly in Latin America. Brazil and Colombia already have a substantial allotment of such funding and have committed themselves to match it with equal funding and to develop a program for undertaking the appropriate research. In these countries, in Korea, and others, where major commitments to develop alternative systems through educational technology will be made, major opportunities will exist for advancing the state of knowledge about and actual application of educational technology systems.

Studies of Strategies and New Options

AID has had underway since July 1970 a series of studies, under the overall direction of the Academy for Educational Development, aimed at analyzing some of the questions which underlie AID decisions on strategy and program policy in this field. By September 1973 most of these will be completed.

During 1972, as these studies near completion, our major concentration will be on transforming the ideas developed therein into a form likely to affect programs, practices, and policies. We are not yet certain how best to accomplish this.

A first step, however, must be to try out these ideas with those likely to use them, developing-country professionals and decision-makers, as well as with other experts worldwide. Mechanisms for this dialogue have yet to be developed. We hope to bring together diverse groups of specialists to work with these ideas — social scientists, advertising men, creative broadcasters, educators, policy makers and others, in the hope that from this ferment some imaginative and operationally feasible project plans will emerge.

7. Resource Allocations

Staff and Travel -	3 MY -	$25,000
Consultants and Travel -	250 MD -	25,000
GTS Funds -		350,000
*Research Funds -		800,000
*Institutional Development Grants -		800,000

*Specific proposals to be made later.

B. Non-Formal Education

1. The Problem: To identify and utilize out-of-school educational resources effectively as part of a national learning system.

2. Potentials for Development: The potentials of non-formal education have been amply demonstrated in the developed countries. In such diverse countries as the United States and the Soviet Union, non-formal educational activities are as varied and comparable in scale to those of formal education.

With regard to the LDCs, we know that non-formal education historically has been the primary mode of learning. However, we are just beginning to understand how these modes have carried over and been modified to meet modern problems. Studies which have been made thus far by AID, IBRD, UNESCO and the LDCs themselves broadly suggest that, properly developed and supported, non-formal education is perhaps the only way that the diffusion and application of useful knowledge for development can effectively be achieved.

There are several reasons for this:

First, traditional, formal education is becoming prohibitively expensive for many of the developing countries in sheer terms of numbers of students and availability of financial resources.

Second, the skills, knowledge and capacities of the labor force, as indicated above, are developed as much if not more through experience, on-the-job training, and other kinds of non-formal education as through formal schooling.

Third, a very large proportion of the present and future population of most newly developing countries will have had little or no formal education at all. Its only chance for skill and knowledge development, therefore, is through some kind of non-formal education.

Experience in both developed and developing countries has demonstrated that:

1. Non-formal education can be valid, high quality education for imparting "life" skills and knowledge. It need not be third-rate formal education.

2. It can reach large numbers of people where they live and work. It can impart useful knowledge, skills and recreation without removing people from their normal environments and responsibilities.

3. Non-formal education can be highly diverse in organization, funding and management. It can emphasize local initiative, self-help and innovation on the part of large numbers of people and their local institutions. Every successful learner can become in some degree a teacher.

4. It can pay at least its own way initially and in the longer term increase employment, productivity and social participation.

5. It can make learning a national, life-long learning experience, compatible with the interests of individuals and communities, for all economic levels of a society.

Non-formal education cannot achieve all these things immediately. If properly developed, it can do all of them increasingly well.

3. Strategy: The basic strategy for this key problem area, as for the others, is outlined in Section V. Much of what has been said of the strategy for educational technology is equally applicable to non-formal education. However there are significant additional dimensions.

Our strategy in this area therefore encompasses the following additional elements:

1. To establish the concept of non-formal education as a form of education, quite different from formal education systems, but potentially capable of providing non-school populations with educational services systematically and in ways which significantly serve individuals, societies and the purposes of national development.

2. To study, document and disseminate information on successful examples of non-formal education which appear suitable for experimentation and application in other LDCs.

3. To provide professional and financial support for research, experimentation and implementation of those models which appear most promising, or for new concepts which appear worthy of testing.

During the past year our strategy has been to assist in knowledge generation and dissemination. This has been done by:

a. providing an institutional base for descriptive and analytical studies carried on jointly by U.S. and LDC personnel;

b. encouraging and participating in regional conferences;

c. disseminating, both within and outside the Agency, special studies in the area of non-formal education;

d. exchanging program and policy information, particularly with multi-lateral agencies, and

e. reviewing and providing consultative service on project identification and design.

EHR strategy for the fiscal year ahead is to continue in this vein and to strengthen the institutional mechanism whereby we can contribute to the development of non-formal education, accelerating work on the nine categories of studies contracted for under contract with Michigan State University (MSU).

It is also our intention to create an institutional response capability to assist Missions requesting consultation or assistance in the design and development of non-formal educational projects. Indications are that an increasing number of LDCs will come forward with requests for individual projects or include non-formal education as a part of sector development plans. EHR will continue its non-TAP project observation and liaison in order to anticipate problem areas or needs requiring special assistance.

4. Strengthening U.S. Capabilities: Our primary effort in this area has thus far been a contract with Michigan State University for nine basic studies in various aspects of non-formal education.

The basic purpose of these studies is to provide LDCs with the beginning of a systematic base of knowledge on non-formal education in response to their growing needs for such authoritative information. This enhancement of knowledge based on non-formal education will contribute to the educational planning, assist in the rational choice among various human resource development strategies, and provide options to the donor community and to the LDCs.

They are designed to provide a body of knowledge, planning guides, new insights, and alternative strategies which are needed to undergird future efforts in non-formal education.

The subject listing of studies which follows indicates the areas of inquiry involved. While identified as individual items there will be a high degree of coordination and interrelationship among them. Additionally, all of this work will be carried out as an interdisciplinary team effort in such a way as to form linkages with other appropriate institutions and groups throughout the world interested in the subject matter.

1. Study - Exploration of variables that shape and determine the effectiveness of non-formal educational programs, their organization and structure over time.

2. Study - Involves the conceptualization of the non-formal system of education in terms of various categories which will help organize knowledge and identify strategic opportunities, and indicate fruitful forms of international interaction.

3. Study - Broad-based survey of the national learning systems in several countries with special attention to non-formal education, its scope, cost, relative effectiveness, problems and limitations.

4. Study - Studies will be made of the critical variables in instructional design, procedures, and materials (independent variables) in terms of consequences on human behavior (dependent variables). In addition, the studies will identify social-cultural elements for effective communications.

5. Study - 1) Bibliographic search
   2) NFE Survey - Brazil
   3) Evaluation case studies (2)

6. Study - Case studies in selected countries

7. Study - This study will center on the development of a model of the human resource sector with attention given to the role of non-formal education within the total system. Essentially, it will be a feasibility report to examine model-building for education and the human resource development area.

8. Study - Examine and compare various administrative alternatives for creating and managing specific non-formal education programs and non-formal education on a broad basis.

9. Study - A search for alternative designs for providing participant training in non-formal education.

10. Study - Participant training.

In addition to the work being done by MSU, the Agency has made a 211(d) grant to UCLA, to develop a multi-disciplinary competence for analysis of effective alternatives to traditional education in Latin America. The purpose of the grant is to build a capability for evaluating the relevance, efficiency, methodologies and costs of non-formal education as well as formal educational alternatives to traditional education.

This grant, administered by the Latin American Center at UCLA, also conducts its work in consultation with MSU, the East-West Center, the Academy for Educational Development and other A.I.D. supported U.S. institutions.

The LA Bureau and TA/EHR jointly monitor this program.

5. Strengthening LDC Capabilities: Although our principal effort so far has been building a better knowledge and experience base in the United States, derived from extensive contact with LDCs, several significant activities have been conducted to strengthen LDC capabilities.

Four seminars on non-formal education were conducted in 1971, in Washington, Malaysia, Korea and Africa. Eight Asian countries prepared papers and participated in one or more of the three seminars in the U.S. and Asia. Eleven African countries participated in the Lagos seminar, based on a set of case studies prepared by the African-American Institute for the Africa Bureau.

Although these activities were funded by the Regional Bureaus, TA/EHR assisted extensively in designing, organizing and preparing materials for them. EHR staff members participated in the U.S. and Asian seminars.

6. Future Directions and Prospects: There is every indication that important countries in all regions are turning rapidly to development of non-formal education as a partial answer to their educational dilemma and to enhancement of their human resources.

Brazil and Colombia are undertaking very significant steps in this direction, with funding and technical assistance from AID.

Sparked by three seminars (in Washington, Malaysia, and Korea) on non-formal education, sponsored by AID, all the countries of East Asia have begun serious study and experimentation with more organized forms of non-formal education.

The Africa Bureau has instructed all its Missions to investigate promising projects, programs and opportunities in non-formal education with a view to making this mode of education its primary emphasis in Africa.

The future prospects are, therefore, highly promising in non-formal education for development. The knowledge and experience base must continue to be built, but in the next two fiscal years, our emphasis will shift substantially to assisting LDCs in defining the role non-formal education can play, learning how to develop and manage it, and in evaluating results.

In doing this, we propose to fund technical services through MSU and/or other institutions having competence in this field.

Research in non-formal education is needed, but the mode in which it can best be conducted is as an adjunct to experimental projects or operational programs. Consequently, all GTS contracts will provide for a research component.

There is as yet no clear-cut case for an institutional development grant in this field. Many U.S. institutions have the basic resources for effective work in non-formal education. What is needed is an aggregation of these resources, with a focus on non-formal learning in the LDCs. The MSU project is a significant model of institutional development through GTS funding.

7. Resource Allocations:

Staff and Travel -	1 MY -	$10,000
Consultants and Travel -	100 MD -	$10,000
GTS Funds -		150,000
*Research Funds -		200,000
Institutional Grants 211 (d) -		None

*The project contemplated is focussed on research on the learning potential of the employment environment, and involves non-formal education, educational technology and finance and measurement.

C. Educational Finance and Measurement

1. Statement of the Problem

The less developed countries face serious financial problems with respect to providing education for their citizens. These problems derive in large part from the fact that LDC leaders are confronted with increasing social pressures for more education and due to runaway population growth there are greater numbers of people now seeking more education. Added to these considerations is the problem that the costs of [illegible] have been increasing at an alarming rate, to the extent that w[illegible] last decade the average rate of increase of public expenditure for education has outstripped the average increases in total public expenditure and in national income in many LDCs. In terms of percentage of national budgets allocated for education, many LDCs are devoting as much as a fifth for this sector, some nearly one-fourth. Clearly, this condition cannot long continue. Already some LDCs are indicating that they have reached the limit in what they can commit to education; in a few countries cutbacks and retrenchments in national budget allocations for education are planned.

A further dimension of the financial plight of education in LDCs is that quality education is for many only a hope for the future. The education that can be afforded under present circumstances and constraints is nothing more than a minimum "holding of the line."

The problem than, may be stated in the form of a question: "How can LDCs pay for the education their people need and desire?" At least two possible answers, short of complete resignation, are agreed upon by experts concerned with the problem. On the one hand, with increasing numbers of people to educate and limited national budgets to address the task, alternative approaches to funding may be developed. On the other hand, given the inefficient wasteful and costly character of much LDC education, ways may be sought to effect economies, to make education less costly, in short to make it affordable.

2. Potentials for Use in Development

What is the potential, the promise of the two possible avenues of attack: identifying alternative funding schemes and cutting costs?

Alternative Funding Approaches. A great many different funding approaches have been tried, including industry-tax schemes for certain kinds of technical and vocational education; student-loan programs, especially for higher education; and local community self-help or

"assistance in kind" schemes.

While these and other alternatives to national budget funding of education have been experimented with in developed and developing countries alike, no comprehensive assessment of their overall promise and potential has been available to LDC planners who need to consider the array of options open to them.

No doubt part of the difficulty arises from the lack of any working information-sharing program such that LDC planners can readily tap whatever experience is available. Some sharing of information does take place at international meetings and through occasional publications of analyses of funding approaches made by scholars working in the subject area. But this "fortuitious" sharing of experience is not really filling the need to get information directly to people who need it in a timely fashion.

In addition, if LDC planners are to get a clear picture of alternate funding approaches, means must be employed to evaluate such schemes in some systematic manner, so that their relative values and utility can be considered and compared. To date, little attempt has been made in this direction.

Cutting Costs of Education. The educational systems of all too many of the developing nations are characterized by antiquated management practices, dysfunctional structure and organization, and the lack of long-term planning. Wastage of resources that are available to these systems is widely prevalent, especially in the case of expenditures dissipated through high pupil attrition rates and those that are misallocated to programs which do not mesh with the needs and conditions of modernizing societies. While the promise of progress in cutting costs is not overwhelming, there is little question but that every attempt must be made to effect whatever economies may be possible.

The business of cutting the costs of education involves a number of considerations, some of which are basically theoretical. Education is not an "industry" in the classical sense and defies any neat classification as either an investment or consumption activity. In actual practice, governments decide to spend money on education for many different reasons, for both investment and consumption purposes.

Investment expenditure for education, incurred in the present to realize future benefits, has in more recent years taken on

significance in the work of economists who talk about investment in human capital. In short, they hold that future levels of production are not dependent just on labor and physical capital, but on the technical know-how and the skills of workers, which are provided by education.

Education is obviously also consumption, in the sense that expenditures are incurred in the present for present benefits. Governments after all have spent scarce money to create whole new universities, not with a view to bringing about future increases in productivity, but basically because universities are a status symbol, a sign that the country is in the vanguard of modernization; the expenditure in these instances is thus clearly for present benefit. And, the individual citizen may want his children to attend school principally because he believes his children cannot fully enjoy life without schooling.

However, the issue is really not whether a government decides that education is investment or consumption, but rather which receives most emphasis, for this emphasis is what determines allocation of resources. Developing countries for the most part tend to emphasize the investment character of education. In this vein, for a number of years the preoccupation of economists of education has been the question of the magnitude of education's contribution to national economic growth, and several analytical approaches have been applied. Among these is the correlating of some index of educational progress with some index of economic progress; attempting to explain the phenomenon that increases in GNP or output cannot be accounted for fully by increases in inputs of labor and physical capital (the "residual" question); and measuring the economic returns to education by comparing costs of schooling with real earnings of workers (rate-of-return studies). These, and other similar approaches, however, have not provided any clear-cut answer to the question of how much education contributes to national growth.

In more recent years there has been a shift in emphasis in analysis; instead of seeking to explain past rates of economic growth, the chief interest of many economists now is to find ways to address problems of allocating funds in the present, which in essence means a searching out of strategies for educational planning and resource allocation, and looking at costs, pupil wastage, system structure and operation.

For example, the social demand forecasting method is a technique which shows how much must be allocated to a given level of education if present trends continue; if education entry requirements, "price" of education, employment opportunities and other national economic conditions remain constant.

Another example is the manpower forecasting approaches, which have lost some of their earlier attraction, but continue to be used in LDCs because it is well known that a shortage of trained workers represents a major barrier to economic growth. These methods, involving forecasts of number and distribution of trained workers needed to produce a given output for a target year, neglect other aims of education such as social and citizenship development, and are liable to substantial error for a number of technical reasons. Further, they do not provide a solution to the problem of how to allocate resources.

A third approach is cost-benefit analysis, essentially the comparison of the costs of producing a given amount and kind of education with the value or benefit yielded by it. Thus, it is possible to compare different programs of education and to make allocations based on such comparisons. Rates-of-return studies undergird cost-benefits analyses and the latter suffer from the limitations of the former, in that earnings, which are the essence of rates-of-return, are not solely determined by education, but by the background, motivation, innate ability and other personal characteristics of workers, and also by the vagaries of the wage structure of a given country's economy. Moreover, age-education-earnings profiles, the basis of rate-of-return calculations, reflect past and present supply and demand conditions rather than future conditions, which is what interests the planner.

These analytical procedures and others that give special attention to costs show real promise in helping LDCs to find ways to bear the burden of their educational programs, and there is no doubt that further refinement and adaptation of existing techniques and the creation of new techniques will be of great help to LDC planners.

3. Strategy

The broad goal of the Key Problem Area of Educational Finance and Measurement is to establish a fuller range of resources for LDCs to use in (a) identifying, evaluating and utilizing alternative schemes for financing education, and (b) identifying, asessing and correcting educational system inefficiencies in order to keep costs of education at manageable levels.

What is being sought is a material increase in three major types of resources:

1. Human, meaning experts and specialists working in the KPA.

2. Institutional, meaning associations of people working in a particular physical setting. By 1/1/73, the target is to have at least one U.S., and two or more LDC institutions at work in the KPA. Where and as possible support and encouragement will be given to inter-national agencies to the end that all three types of institutions may be collaboratively engaged in a network association in the KPA.

3. Informational, meaning basically the printed word, as for example, descriptive data, research findings, strategy statements, program documentation, and analysis, implementation and evaluation methodologies. The Inventory-Classification (Harvard Project; see below) of Activities in Educational Finance and Measurement will be completed in early 1973. In addition, the target by 1/1/74 is to have several handbooks and/or other analytical tools produced, two or more international conferences convened and at least one AID-supported research project underway. Where opportunities arise, field projects in the KPA will be encouraged and supported.

It is assumed that the realization of LDC educational objectives at all levels will be substantially impaired unless a wider range of education finance and measurement approaches are developed and applied.

4. Strengthening U.S. Capabilities

Within A.I.D. Our strategy for this KPA entails the following steps, designed to draw on in-house capabilities and to support AID/W and the missions in projects relating to the KPA.

1. We will continue to make fullest possible use of the Task Force in Educational Finance and Measurement. Three special sub-committes have been formed to focus time and energies of members. The first sub-committee advises the PAM on the Harvard Project. It receives the contractor's bi-monthly reports, reviews special substantive papers of the Project, and assists in other ways in providing guidance to the Contractor in the conduct of the Project.

The Sub-Committee on Proposals will assist the PAM in reviewing GTS, Research, and 211(d) proposals received from extra-AID sources. It will be a

sounding-board for reacting to new project ideas proposed by the PAM, and it will itself be the source of new project ideas.

The third sub-committee will assist the PAM to maintain close surveillance of Regional Bureau and Mission activities relating to the problem area.

2. The PAM is maintaining close touch with the Korea pilot project in education, having made one visit to Korea in September, 1971, and keeping contact with the project through Dr. William M. Williams, Mission Education Advisor in Seoul, and the Asia Regional Bureau. In addition the PAM is following closely the work of the Special Educational Finance Advisor, Dr. Frank N. Farner, USOM/Bangkok.

   Dr. Manuel Zymelman, Director of our Harvard Project, is also in contact with the Korea Project and with Dr. Farner in Thailand, and is available to offer informal consulting support to both. One of the analytical tools developed by the Harvard team, an Index of Educational Effort, shows promise of application for Thailand and will be discussed at a meeting between Zymelman and Farner in mid-June, 1972.

3. PPC/PDA has recently shown interest in the broad field of economics of education, and we are working with two of their staff members in identifying research projects in this area that might be supported through their office. One PPC staff member has recently consulted with Dr. Zymelman on this subject.

Contractors, Grantees, Consultants. We are initiating new contacts with experts in the KPA, chiefly through our Harvard project, with a view to engaging such people in research and consulting activities for AID/W and the missions.

We have carried on conversations with staff of the Division of Policy Planning and Administration, School of Education, University of California, Berkeley. Dr. Charles Benson and his associates of that institution have prepared a 211(d) grant proposal which we are now reviewing for possible funding in FY 1973.

One member of the Berkeley staff will shortly undertake a special analysis of methods of reducing unit costs in the LDCs. His work

will be supported through a purchase order agreement. The idea for this assignment grew out of experience with the Harvard Project and discussions with members of the Task Force. The Berkeley staff member will consult with Dr. Zymelmam about this assignment.

Linkages with Other Donors, LDCs, Multilateral Agencies. Through the Harvard Project we are identifying individual LDC scholars and officials as well as organizations and institutions having experience or interest in the KPA.

We have had several conversations with the International Institute for Educational Planning in Paris about possible collaborative activities in the KPA. We expect to engage at least one of their staff members as a consultant in a new project in FY 1973.

In early January, 1973, a conference will be held of top-ranking LDC educational and planning ministry officials for the purpose of reviewing the output of the Harvard project (see full description below). Besides the value this conference will have for the Harvard project, we expect to gain some useful insights into the merit of this means of tapping LDC opinions and experience for guidance of AID planning.

The PAM will continue to hold consultations with U.S. and non-U.S. experts, with LDC officials, and with representatives of other external assistance agencies. The purpose of such consultations will be to make further contacts with persons working in the problem area, in order that we may gain a clearer picture of new activities that might be undertaken either by AID or jointly with others. This continuing survey by the PAM will complement the "mapping" exercise of the Harvard Project and new GTS activity as well as on-going activities by the 211(d) institution. Such contacts with those working in the problem area will help us to locate LDC national or regional institutions which, through some form of assistance might serve as resource bases, to respond to requests for information and specialist assistance, and to obtain evaluative feedback from these sources relative to developments in the problem area.

5. Strengthening LDC Capabilities. Our strategy calls for support of new LDC projects relating to the KPA as they are developed. The new sub-committee of the Task Force as explained above will assist the PAM in keeping abreast of new AID funded projects. Contacts made through the Harvard project, including the January, 1973, conference, will permit us to be informed about activities in the KPA planned without AID support.

The 211(d) grant (see below) will provide for collaboration between the U.S. institution and one or more LDC institutions, with the purpose of strengthening both types of institutions, as well as providing for the training of LDC nationals in the KPA.

The new GTS Project (see below) will directly involve at least one LDC institution, and should be instrumental in strengthening that institution's capabilities.

6. On-Going Projects

Inventory-Classification of Activities in Educational Finance (Harvard University). Based on the analysis of the problem area, the PAM parepared a project proposal, Inventory-Classification of Activities in Educational Finance, designed to (a) survey and organize information on the particular strengths and weaknesses, advantages and disadvantages, and general characteristics of optional funding schemes available to, or being used by the LDCs; (b) survey and organize information about the kinds of educational system efficiency problems of LDCs, and of the relevance and utility of the various analytical tools that can be applied to such problems; (c) survey and organize information about educational costs and expenditure patterns, and the sources of educational funds in the LDCs; (d) survey and organize information about other aspects of educational finance, such as procedures by which LDCs may adjust financial capabilities to social and other pressures for more education; (e) specify needed research or other activities, and how, why, and where such activities ought to be undertaken, by whom, and with projected pay-offs.

A contract was signed with Harvard University (AID/csd 3322) in June, 1971, and work began on the project three months later. The product of the project will be a manual, or handbook, of two parts. The first will be an informational resource for LDCs, containing the organization and classification of the research and other information on activities in educational finance [parts (a) through (d) above]; the second part will "map out" the new research or other activities that ought to be undertaken [part (e) above].

A final review conference with full participation by LDC representatives will be held in early January, 1973, for the following purposes: (a) To review, in general terms, the first draft of the manual; (b) specifically to enable participants to react to the feasibility, utility and value of research and other activities suggested in the manual; (c) to obtain any additional suggestions from LDC participants for research and other activities needed in the problem area; and (d) to work out the best program of later distribution of the final published manual.

This conference, with its function as a mechanism for review of the Harvard Project manual, has promise of providing a key input into further strategy development. Every attempt will be made to get the highest ranking civil servant in LDC education and planning or finance ministries from at least three countries in each geographical

region, for a total of twenty-four LDC participants. These people will receive a copy of the first draft of the manual well in advance of the conference, and will spend about five days in meetings at a conference site outside the United States.

Conference participants, as noted earlier, will be asked to react to the manual's suggested future research and other activities, and to make any additonal suggestions along these lines. Participant's comments and suggestions should thus be most helpful in determining next action steps for the problem area.

7. Future Directions and Prospects

a. New Projects: Evaluation of Educational System Outputs. Educational "outputs" may refer to both quantitative and qualitative elements. On the one hand, we may consider the numbers of persons educated to different levels, and on the other the amount and character of the knowledge such persons have obtained, the skills they have mastered, changes in their ability to cope with problems of living, and the inculcation of certain attitudes. These elements, as they are secured through the educational process, represent "values" added to student "inputs."

In order to arrive at some reasonably objective assessment of the return realized from investment in education, educational values must be translated into economic values, such as increased productivity and higher income. Rate-of-return studies, in which for example the earnings of college graduates are compared with non-graduates, represent one means of getting at the benefits education bestows upon individuals and society. But there are problems with rate-of-return studies and other research involving the outputs of education. Among these, especially relevant to LDC education systems, is the fact that the mere possession of a credential certifying completion of a given level of schooling tells us very little about what the student really knows or has achieved. This is as true of general as of special educational programs. Further, in many LDCs there is no way of determining what the non-graduate takes with him in the way of "value-added" skills, knowledge, and attitudes. Urban-rural differences in school programs, together with individual, motivational and socio-economic background differences, further complicate the picture.

It is therefore clear that much needs to be done in evaluating the outputs of educational systems before we can do the best job in determining benefits derivative from education.

Outputs evaluation as related to system efficiency. The matter of internal efficiency of education essentially poses the question, "Can we make changes within the educational system in such manner that the value of educational outputs is enhanced?" In other words, if changes can be made within the system, there will be

resulting changes in the outputs of the system.

If one thinks in terms of the input-output model by which most production processes may be characterized, and looks at education as a type of production process, it is clear that there are at least three major types of modification that can be applied to improve the outputs of the educational system.

First, a more cost-effective "mix" of resource inputs can be secured. For example, planners might consider the alternative of using instructional television to supplement the relatively untrained teachers currently available, as against hiring greater numbers of well-trained teachers. Second, the technical operation of the educational system might be improved, embracing all those measures that would insure better use being made of the resources that are available, as for example, improved budget systems, fuller utilization of supervisors, and changes in scheduling. Third, the priorities among educational outputs can be reordered, so that the educational production process turns out more of those yielding high benefits. Here we are concerned with basic system objectives. For example, can greater benefits be realized through investment in secondary as opposed to higher education; should investment in technical and vocational secondary education be favored over investment in general secondary education?

All of these, concerned with the matter of internal efficiency, relate to the product or output of the educational system, and to better evaluate that output is to provide a more useful benchmark for improving system efficiency. In other words, when and as changes are made within the educational system, we need to know if the value of the outputs has been enhanced.

We have been aware of the pressing need for work in outputs evaluation for some time.

The PAM attended a seminar in Paris on educational finance in November, 1970, sponsored by the International Institute for Educational Planning. He met with representatives of various assistance agencies in attendance at the Seminar to discuss the need for attention to the problem of evaluating outputs of educational systems. The interest in the topic generated at the Paris meeting led to a second meeting in Washington in March, 1971.

At the Washington meeting, attended by representatives of UNESCO, Ford Foundation, the IIEP, AID, and IBRD, it was agreed that an international conference would be a valuable next step in drawing worldwide attention the problem. The IIEP was encouraged to undertake such a conference.

At meetings in Paris in September, 1971, the PAM reviewed the conference idea with Mr. Raymond Poignant, Director of the IIEP, and with Dr. Kravetz. The IIEP agreed to submit a proposal to AID.

The proposal finally received from IIEP in November, 1971 projected an international symposium on outputs evaluation for July, 1973, with a preplanning meeting in Paris in January, 1973. This preplanning meeting would involve LDC participants, thus insuring that the final symposium would be responsive to their needs.

Subsequent discussions with IIEP, in which we tried to get them to move faster in the project, were not successful, principally because IIEP was confronted with the problem of having insufficient staff to organize the project for an earlier date.

Therefore, we propose a new project designed to assure faster action. Our project will involve LDC people fully, as the IIEP proposal would, but more centrally and substantively.

The project has been discussed with members of the Task Force, and guidance for its design has been secured from the Harvard Project team. The latter fully supports the need for this project and believes it can be of substantial help in moving ahead in the KPA.

This project would have the following purposes: (1) to publicize the KPA, and to stimulate more pointed and specific discussion by LDC people and others working in the KPA about measurement problems and issues related to the evaluation of educational system outputs; (2) to actively engage one LDC educational or social science research entity in collaborative work with a U.S. institution; (3) to produce guidance information on outputs evaluation, including actual outputs measurement methodologies for LDC use; (4) to identify needed high priority action research in outputs evaluation; (5) to produce designs for those research projects deemed to have highest priority.

The plan is to select a contractor to take the following steps: (1) to identify one LDC educational or social science research institution with which to collaborate in the project; (2) together with the LDC institution to (a) identify a group of world experts in the outputs evaluation field, (b) commission these experts to produce papers in which they would describe existing and new methods of measuring outputs for LDCs for different levels and types of education,

analyzing the strengths and weaknesses, and showing means of actually applying such methods, (c) convene a conference of LDC educational and/or social science research scholars to consider the papers and the relevance for LDC application of the methods of outputs the evaluation presented; the conference would also identify needed high priority action research vis-a-vis outputs evaluation, including trial of certain methodologies; and (d) produce designs for those action research projects deemed to have highest priority.

The whole project should be designed to consume not more than 18 months. The first four months would be spent in identifying and arranging collaborative action with the LDC institution; the next four months for identifying world experts and setting them to work on their papers; the following five months for the writing of papers, identification of LDC participants for the conference, and arranging the conference and convening it; the final five months would be used for the writing and preparation of several products: a handbook describing different outputs measurement methodologies; project and conference final reports; a set of action research designs; and a plan for the most effective dissemination of the handbook.

b. The Status of Research in the KPA. The strategy for this KPA is designed to produce resources of human, institutional and informational types. While we do not at this time have any specific research proposals to propose (informational resources) for possible funding in FY 73 or FY 74, the GTS projects (the on-going Harvard project and the new project, Evaluation of Educational System Outputs) will provide specific ideas for high priority research which AID may fund or which others may be encouraged to undertake. Emphasis will be on action research; especially field pilot projects or actual trials of new analytical and measurement tools and procedures designed to further the goal of this KPA.

The Harvard Project has already provided guidance for new activities in the KPA (e.g., the GTS outputs evaluation project), and ideas for research will first be discussed with LDC people by the Harvard team in January, 1973, and then as revised will be incorporated in the final report of the Harvard Project (the handbook). The handbook will be ready in April, 1973. The PAM will then be in a position to put forward specific research proposals for possible AID funding in FY 1974 or FY 1975.

The 211(d) institution (see following section) will be able to initiate research in the KPA soon after the grant is received, hopefully by early fall, 1972. In other words, AID-supported research in the KPA will not entirely be delayed until FY 1974.

Further, research in the KPA is going forward on a number of other fronts. The El Salvador ITV project has produced a cost-effectiveness study, the Korea education project will undoubtedly include costing analyses of several types. The IIEP is continuing its educational finance case studies, and the World Bank plans work in analyzing student loan programs and will give attention to other aspects of the KPA.

c. Institutional Development [211(d) grant]. The strategy encompasses a 211(d) grant, to be made to the University of California, Berkeley, in order to strengthen competencies and to create a resource base in the problem area.

The grant will permit the institution to add new faculty, thus leading to more variety in curriculum offerings, closer relations between staff and students, and more time for travel and research in LDCs. Grant money will provide for a substantial increase in the numbers of students trained to work in educational finance and measurement, especially training and experience under controlled and supervised conditions in actual field situations.

In addition, grant money will enable the institution to expand their contacts with LDC scholars and institutions through the initiation of collaborative research endeavors and the formation of a network of individual researchers and organizations in the key problem area. Further, the institution's documentation and library holdings will be expanded and up-dated through the infusion of grant money.

The institution will provide a valuable means of identifying worldwide, ongoing research and other activities in the problem area. This inventory service will embrace not only the activities that are going forward, but also those researchers and scholars who are active in the field and can serve LDCs, AID, and other agencies on specialist consulting assignments.

The research undertaken by the 211(d) grant institution will derive from the guidance provided by the Harvard project and the new GTS project described above, as well as from other indications of high priority research for LDCs in the problem area.

8. Resource Allocations

Staff Time and Travel: FY 73 - 1 Man Year, $12,500

Consultants and Travel: FY 73 - 15 Man Days, $1,500

GTS Funds: FY 73 - $200,000

*Research Funds: FY 73 - $200,000

Institutional Grant 211(d): FY 73 - $1,200,000

* See item C, 7b.

D. Human Resources Development - A Multi-Sectoral Key Problem Area

1. The Problem: We have defined human resources as people who have the knowledge, skills, motivation and opportunity to contribute constructively to their society, or who have the potential for acquiring such attributes. The problem is how to enhance a nation's human resources as we have defined them.

2. Potential for Development: The most fundamental facts about human resources are that, unlike all other resources, they are human beings, and (2) that they are the one resource that is both the means of and the reason for development.

It is at the human resource level that all development activities converge. Yet in our concern for orderly definition, analysis and administration, we tend to define development sectors in such a way that they are pursued as though the human being were a segmented organism, consisting of, or responding separately to, health, nutrition, education, economic status and social and physical environment. Although we know this is not so, we find it extremely difficult not to conduct development programs as though it were.

It is in countering this segmentation that the quality-of-life concept has its profound importance. The potential value of consciously designing certain of our programs to be human resources centered is therefore very great.

3. Strategy: While human resources are the basic stuff of the social fabric, it is possible to identify strands which are more significant than others. In our thinking, we have defined these roughly into two categories: (1) Those who have by natural or acquired endowment the greatest potential for contributing to development, and (2) those who have naturally strategic roles in society, but whose traditional roles tend to inhibit development.

Of the first category, educated people are an example; of the second, women are perhaps the best example.

Another group is that of persons who by virtue of productive employment - in any sector - can make significant contributions to development. In this case, effective enhancement of the quality of the employed labor force has a vast potential for human resource development.

At the lower end of the age scale, health and nutrition for infants and children loom large as generational gains.

There are, of course, many other possibilities. Not all of them, however, are equally accessible for action by an external assistance agency. The time factor argues for emphasis upon selected adult populations for short-term pay off, since it is long-term when investments are made in health, nutrition and education for infants and children.

It is by no means beyond the realm of possibility that AID can make significant contributions to both in more direct and purposeful ways than it has done thus far. Indeed, there are possibilities that it can make a contribution to both at the same time.

To do this, we suggest as a strategy the conceptualization and design of one or more major projects which takes other aspects of the quality of life of the family as its primary objective.

We have within AID the many professional specializations which lend themselves collectively to such a strategy. We have staffs and fiscal resources to apply to matters of education (in and out of school) health, nutrition, population, rural and urban environment.

It seems reasonably likely that many LDCs would welcome, participate fully and provide leadership for an experimental project in which all these quality-of-life factors were considered in the context of family life.

There are also at least a few institutions that have considerable competence in dealing with social development from this point of view. We have recently received a proposal from Howard University which incorporates this very concept.

4. Proposal: That TAB take leadership in creating one or more experimental projects of the "human resources" type, with the joint participation of all TAB offices.

There is merit, we believe, in considering some of the existing or proposed projects (a Nutritional Strategy for Africa, for example) as possible points of departure. It is also suggested that the project(s) design be within a larger framework of research and institutional development, as well as field pilot projects.

This concept is not novel; the novelty resides in a concrete proposal to do what our doctrine calls for, but which we have not thus far done.

There are no doubt other human resource groups that lend themselves to this same approach. But families in the developing countries are the building blocks of society. They are comprised of "human resources" from infancy to old age.

Most particularly, they are the one social unit in a developing society in which the great majority of women have a central place.

5. Funding: We propose that funds for experimentation of this sort be reserved in the office of the AA/TA and that the Directors of the Offices of Health, Nutrition, Population and Education be directed to begin design of one or more projects, to be ready for formal Agency action by the end of this calendar year.

IX. Externally Determined Program Activities

A. Background:

A strong U.S. National Policy Statement of June 4, 1967, specified intensified efforts to apply books and libraries as basic tools in our efforts for international development. AID's own policy statement, M.O. 1612.69.3, particularized the instruction for this Agency's program attention to books and library development.

While U.S. development assistance efforts have always made use of the print medium for knowledge transfer, the application has not been consistent, nor has it been effectively institutionalized internally in LDCs. At present, both this Office and some Bureau personnel are concerned that, despite the policy statements, our recent concentration of efforts and resources on the newer educational hardware and educational technology in general has tended to lessen our attention to the most fundamental and important of all of the knowledge-transfer tools - print material in its various forms.

We believe that a balanced resource input to development activities involving human learning will require situationally appropriate mixes of old and new technologies to achieve more effective education programs, both formal and non-formal, and to reach satisfactory cost-benefit ratios for LDC fiscal constraints.

B. Actions Taken and in Prospect

During the past year TA/EHR has conducted a comprehensive study to identify:

1. Factual information on what the Agency has done and is now doing in the development and application of printed materials resources in all sectors of its program and its plans for future years.

2. Gaps or weaknesses in past and present program activity involving the printed word in development.

3. Recommendations as to desirable policy and program orientation, for Agency consideration.

4. Identification of opportunities for collaboration and joint efforts with the U.S. private sector and with multi-lateral organizations in knowledge-transfer and educational activities based on the printed word.

The first draft of this study has been completed and is now being studied by appropriate individuals in the various Bureaus of AID. After this initial review it will be modified and given somewhat wider review, both within the Agency and by especially competent external advisors.

At this time, we are not prepared to predict what recommendations we will present, nor to make any funding proposal beyond that of staff time.

Support Area - Government Advisory Committee

a. Support Requirement

The Government Advisory Committee on International Book and Library Programs has been in existence since 1962. It was established by Executive Order of the President to give advice to the various agencies of the Government that are involved in book and library development overseas. It meets four times each year. It has been especially effective in assisting the Government in arriving at policy statements covering activities in this area. $10,508 of central funding was provided in FY 71; $13,000 in FY 72.

b. Strategy

To make the Committee more responsive to the changing needs of the various agencies, especially with reference to the dissemination of knowledge through communications media and developments in information storage and retrieval, recent vacancies on the Committee have been filled with persons knowledgeable in these areas. Two recent appointments were made from Field Enterprises Inc., and Eastman Kodak Company.

c. Action Plan

	FY 72 1st half	FY 72 2nd half	FY 73 Total	FY 74 Total
Project Funds			$18,000	$18,000
Staff Man Months	.5	.5	1	1

Both the Department of State and the U.S. Information Agency pay pro-rated costs for secretarial service and per diem and travel for the Committee.

The Broader Issue: Access to Information

Although print media will continue to be a primary method of knowledge transfer, the state of the communications arts and sciences requires that we, as an Agency, view the problem of knowledge transfer in much broader terms. Consequently, we wish to comment on this problem with full realization that it includes, but goes far beyond, the education sector.

We are also aware that the Agency has a variety of interests in this subject, and that the multilateral agencies, in the end, are probably in the best position to foster a truly international knowledge transfer system.

Nevertheless, the U.S. has pioneered in this field and still occupies a preeminent position. Consequently, there is much which we can do, both directly, in accord with the President's policy, and to stimulate and assist the multilateral agencies.

As we approach a more collaborative relationship with LDCs, we are encouraging deeper study and analysis of national sectors, programs and strategies. We propose to stimulate research by LDC scholars. We hope above all to assist the LDCs in bringing about a better life for their citizens.

In promoting improvement in the quality of life for more LDC citizens, we hope for improved nutrition, more maternal and child health services, breakthroughs in formal education, better decision-making, more efficient management, wider participation in community and national affairs, movement toward sound population practices and programs - in short, widespread forward movement across the economic, social and political spectra.

None of these concerns and emphases is novel. But the respective roles of AID and of the developing countries with which we work will be different. Since the LDCs apparently want a more independent and determining role, it is clear that LDC leaders will need increasingly to search out their own new ideas over the entire range of country development concerns, to weigh possible national courses of action, to choose wisely among alternatives, to mount and be responsible for efficient action programs, and to assess the results in the light of their own national objectives.

Reviewing LDC resources for such a role, we see that most now have at least a modest reservoir of trained people. Most have an embryonic institutional base, and most have at least rudimentary social services. Most realize that whole-cloth adoption of practices suitable to the developed world is usually counterproductive, and that careful study

for suitability must precede innovative programs. Such study may on occasion be precise enough to qualify as research.

Though they are welcoming the new role, the leaders of the developing countries are assuming heavy responsibilities. To be sure, we have seen with great satisfaction the growth in many LDCs of that "critical mass" of trained manpower with good grasp of their country situation, considerable experience in moving development activities forward, and sufficient professional background to rate as first-class members of the world professional, political, and [illegible] community.

This group of skilled and experienced people suffers, however, from a conspicuous handicap: lack of access to information. Once returned from foreign study, they are again isolated from the main currents of worldwide professional and scientific thought. [illegible] no ready access to the vast and exponentially multiplying body of information being generated not only in the developed countries but in other LDCs as well. The skills built and perfected during their years of study abroad in searching out quantities of information resources and in selecting and organizing pertinent material [illegible] often lie unused when they have returned to their [illegible].

The situation of the potential research [illegible] countries is perhaps ever more difficult than that of his colleagues who are action-oriented decision-makers and managers. LDC researchers do not have that vital access to the existing corpus of world knowledge which has been, and is still being, generated piece by piece from a multitude of previous and current workers' efforts. One of the tools of his research trade is denied the LDC researcher: consultation of the relevant literature of past and ongoing activities both to [illegible] sure that he is not "re-inventing the wheel," and also to spark the ideas he could not have created had he not steeped himself in others' ideas and discoveries.

A converse flaw to LDC lack of access to information is the lack of established channels by which products of LDC experience and research can routinely find their way into depositories for study by others. A steady many-directional flow of appropriate and necessary information will be required as face-to-face working relationships with foreign advisors diminish and the traditional technical assistance dwindles.

In the past, of course, much information has, in fact, been transferred to LDCs in the course of joint LDC/AID activities. For the most part this information has been selected by knowledgeable foreign advisors from the vast store available as being particularly appropriate to the work in hand. There is no doubt that such knowledge transfer has been beneficial, but the locus of decision-making has been with

the outsiders. It has in the main been a situational providing of information: selected research papers for the entymologist working on a project-related research which was chosen jointly by the LDC scientist and the foreign advisor; or a library of books and other reference materials, usually selected by the foreign advisor or by U.S.-based personnel as part of an institution-building activity. In addition, in the 1960s, AID's "book gap" and central book and library activities provided further information transfer, but emphasis was more on information related to specific joint project ventures, than on a development of a broad-gauged information system itself.

In recent years, interest in information storage, retrieval and dissemination has grown both because the problems as cited with lack of information dissemination have become more visible and because of the potential of new technologies to surmount former barriers. We can now computerize and miniaturize our information resources. We have automated techniques of acquisition, storage and retrieval. We can enlist telecommunications including communications satellites, digital transmission, facsimile and cathode ray slow-scan techniques. We can now answer specific questions with a bibliography on a research paper or resume or summary of trends almost instantly. No longer do we need to prevision what the information needs may be by providing an entire library of volumes to await possible use. All too often the traditional "library" is a static and dated repository, chaining the user to the older knowledge in rapidly changing fields. We now have the means to help develop the habit of seeking information before action decisions are made.

It seems appropriate now, as AID moves into a new era of collaboration requiring more independent problem attack and solution by LDCs themselves, to begin a serious study of the complex problem of establishing more enduring, user-responsive and systematized information transfer. The system should in each case be specific to the LDC in question. It is probable that only the higher levels of such an LDC information system could be directly serviced from existing information repositories in the developed world. Adaptation and simplifying of material for, say, the village farmer, would seem to be the responsibility of the LDC itself.

An attack on the information dissemination problem has some unusual characteristics. First, donor agencies tend to be basically action oriented. They plan and carry out an operational project or complete a research. Then they move on to the next action step. Storage for efficient and wide dissemination of results is not part of the job; it requires, in fact, information systems skills different from but no less substantive than those of the agriculture, health, engineering or social science experts. Second, much of the problem is

the sheer quantity of material produced by R & D activities in industrial countries, a large part of it market-oriented, not development-oriented. Even when appropriate for LDC purposes, information must be in the format suited for the intended user. Third, though the need for greater access to information is evident in all sectors of LDC development, no one sector or professional field sees a broadly based LDC information system as a priority over here-and-now action project demands on resources. We tend to consider information sharing vital - but peripheral. The one exception in AID program activities to date is the growing network of agricultural research institutes. To the extent that their research products are ultimately placed in information repositories for dissemination beyond the participating scholars and institutions this agriculture research will be a valuable contribution to all LDCs and, indeed, to the developed nations as well.

Aside from agriculture, some very specific and isolated activities are being undertaken here and there in AID, mainly in [illegible] information storage for ready retrieval, but no attention has yet been paid to the institutional development of the information sector of those LDCs which are ready to take advantage of the considerable information resources of the developed world. The fact is that the available resources are tremendous, but their utility and measures to make them accessible to LDCs on some continuing basis have not been studied.

In addition to LDC needs for access to information, AID itself has been unable to cope with its own internal information organization and with placing of its program and research documents where they will receive the broadest utilization. Here again, piecemeal efforts are being undertaken, and they should be analyzed and woven into an overall system.

An Action Proposal

We propose that AID take the leadership in developing information management capabilities to serve LDCs and to become eventually part of a worldwide system. Included are two subordinate emphases: 1) Appropriate organization and storage of AID documents of continuing utility to AID itself and to LDC and other users; and 2) planning and implementation to the extent feasible of the information system in selected LDCs.

There are several reasons why AID should take such leadership:

1) The U.S. has excellence in information systems, management and hardware.
2) The retention and expansion of overseas markets would be beneficial in different ways to both the LDCs and the U.S.
3) The large-scale international information systems which may evolve within the decade of the 1970s have been conceived and

planned primarily by scientists with the needs of industrial countries as primary emphasis.

4) We can ensure that future worldwide information systems are compatible with U.S. systems and U.S./LDC development goals. Close consultation and coordination are needed right now with multilateral agencies evincing a concern with creation of information systems.

5) There is a need to ensure an emphasis on establishing an information infrastructure in developing countries and providing for inclusion of LDCs in systems when their capabilities permit.

6) AID has trained thousands of LDC people, has developed institutions, but has failed so far to devise a mechanism to provide ready access to new information from all sources in developed and developing countries alike.

Proposed Project: Analysis of Information Needs and Resources

A project of one year's duration would identify the following: the content areas considered by both AID and LDC personnel to be of basic importance in the development context; a rough magnitude of AID research reports and other documents available for storage and dissemination; a survey and description of existing information storage repositories in the U.S. and other countries which would be of potential utility to AID and LDC personnel in the content areas of importance; analysis of fit between needs and resources; a factual summary of all multilateral efforts in this field at this time; specification of procedure and cost of tapping into the major resources; general outlines of an AID strategy for assisting in creation of LDC national information systems, promoting greater access to appropriate information by LDCs, and for feeding LDC-developed materials into the same sources.

Since by its very nature and goal this activity has worldwide scope, it is suggested that the Technical Assistance Bureau undertake the initiative. TA/EHR would propose that the information sector activity be managed by EHR with a multidisciplinary AID input, a consultant group including an information systems specialist, a "hardware" generalist, a computer expert, a telecommunications specialist, and one or two representatives of the "user group." Details of the consultant group and of representation of interested governmental and nongovernmental entities would need to be planned when the project is described in greater detail.

Near the end of the one-year study and analysis, the contract (or PASA) officer would plan with the AID monitoring office a one-day or two-day conference for presentation and discussion of findings and recommendations. Recommendations might be expected to embrace the main outlines of a suggested multi-year program, each of whose various segments might be a discrete and significant contribution to AID/LDC development strategy.

X. AID Professional Staff Development in Education

At a recent TAB retreat, there was considerable discussion of the need for a dynamic program of professional staff development to achieve the career potentials of our staff, and to more effectively conduct the development assistance program of the Agency. Under our charter as a Bureau, this is one of our responsibilities.

We propose, during the next six months, to design a comprehensive, flexible program for AID education officers, in partnership with the Regional Bureaus, the Field Missions and the Training Branch of the Manpower Development Division.