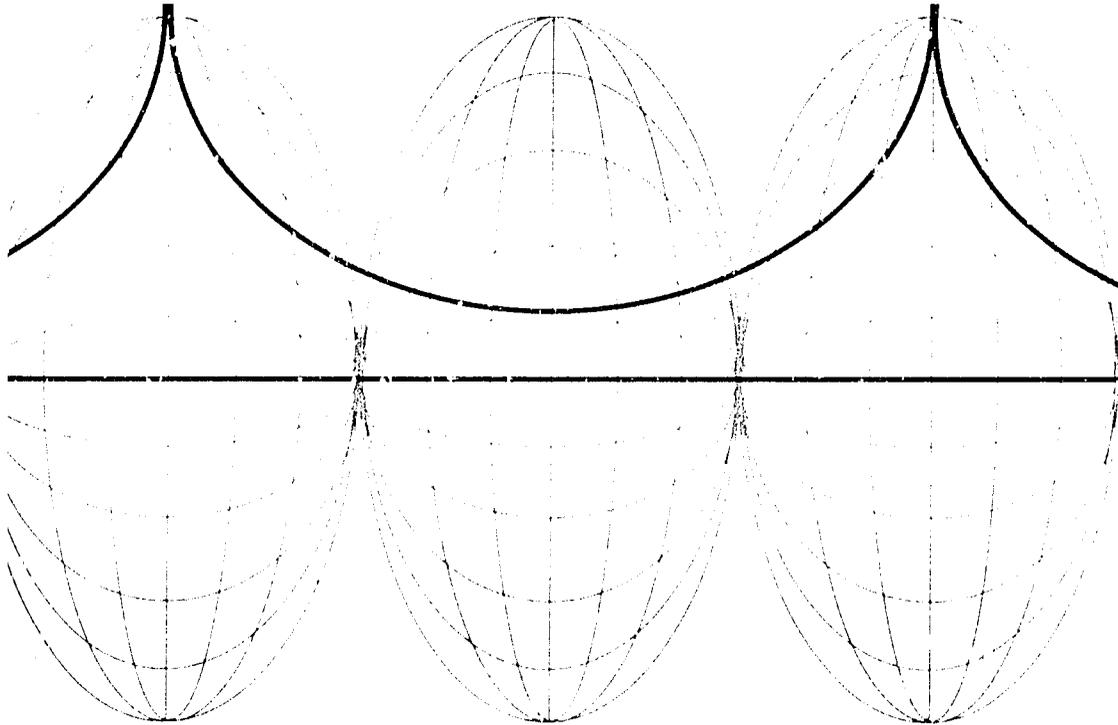


PN-APP-693



B • R • I • D • G • E • S

Basic Research and Implementation
in Developing Education Systems
A Project of USAID

Annual Summary
Fiscal Year 1988
October 1987-September 1988

A. Origins of the BRIDGES Project

Around the world, education is recognized as an important institution for the development of human society, crucial to the technological, economic, political, and social progress in Third World nations. The advances made in education in the Third World in the last three decades, however, have been offset by population explosion, uneven economic growth, crises in world trade and monetary systems, and internal or regional political instability. Given these constraints and limited resources, greater efficiency and effectiveness are needed to improve the quantity and quality of education.

The Basic Research and Implementation in Developing Education Systems (BRIDGES) Project was conceived in response to the above-mentioned challenge. The purpose of BRIDGES is to study policy options that can improve the efficiency and effectiveness of basic education, and to make the research findings available to policy makers, planners, and managers in the Third World, so as to facilitate their evaluation of the feasibility, cost, and impact of alternative paths of educational development.

The BRIDGES Project is funded through a Cooperative Agreement between the Bureau for Science and Technology Office of Education (S&T/Ed) of the United States Agency for International Development (USAID), the Harvard Institute for International Development (HIID), and the Harvard Graduate School of Education (HGSE) of Harvard University. The Project began on October 1, 1985, and is expected to continue until September 30, 1990. Professional staff for the Project are drawn from HIID, HGSE, and from sub-contractual arrangements with the Institute for International Research, Michigan State University, the Research Triangle Institute, and Texas Southern University.



Camel market in Egypt.

B. Assumptions and Strategies

The BRIDGES Project assumes that countries are eager to improve their education systems, but, in addition to severe resource shortages, they lack sufficient information about alternative policies and programs. In learning about policy options, countries also want to know what experiences other countries have had with them, what requirements and procedures are necessary to implement these policies and programs in their own systems, and the effects and costs that can be expected.

While some experiences from the early-industrialized countries are helpful in the design of reforms for the Third World, the successful adaptation of experience is most likely when comparing countries that have similar economic, political, social, and cultural conditions. Useful options have been developed and tried out in some developing countries, but policy makers in other countries lack an effective means to learn of these options and to evaluate their cost, feasibility, and the impact on their systems. Dialogues between educational authorities in developing countries are important for the exchange of experience and policy innovations. Because prior investigation shows that research findings are rarely used by policy makers, planners, and managers, the BRIDGES Project seeks to maximize the direct involvement of country officials in research design, implementation, evaluation, and dissemination.



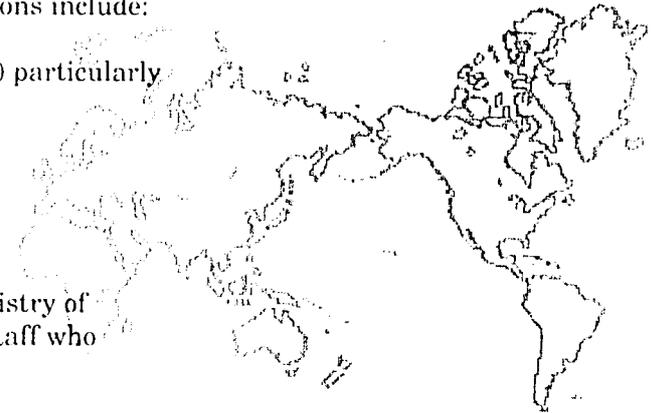
C. Choice of Countries to Participate in BRIDGES

The resources available to the BRIDGES Project are sufficient to permit work only with countries that represent the major variations in those conditions that characterize education systems. These conditions include:

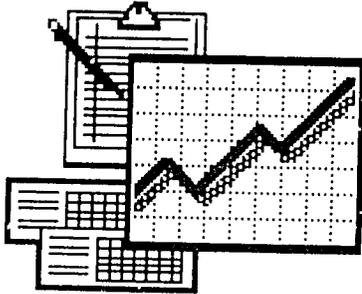
1. access (or the ratio of enrollment to school age population) particularly in groups such as rural youth and girls
2. student retention level in the system
3. the general level of resources available to the system

In addition, participant countries are those in which the ministry of education shares common objectives with BRIDGES and provides staff who collaborate in research. Support by USAID is also a requisite.

The countries participating in the BRIDGES Project to date are Burundi, Egypt, Indonesia, Pakistan, Sri Lanka, Thailand, and North Yemen. Research has also been carried out in Honduras, and brief research has been conducted in Belize, Cameroon, Costa Rica, El Salvador, Guatemala, and Panama. These countries represent the range of problems education systems face. Some countries still have less than half the school age population enrolled in school, some have large differences in the enrollment ratios of boys and girls, some suffer from high rates of wastage or low retention of students, while others have resolved these problems but are concerned with how to improve the quality of education. In all cases there is an interest in what other countries are doing, and an eagerness to share experiences.



D. Policy Studies



The policy issues included in the BRIDGES program of research are:

1. physical facilities and school construction
2. school management
3. teacher characteristics and teacher training
4. learning technologies
5. information utilization
6. access to schooling

Policy studies on the costs and effectiveness of specific policies affecting these areas are being planned and carried out in Burundi, Egypt, Indonesia, Pakistan, Sri Lanka, Thailand, and North Yemen. Related studies have been done in Honduras.

Appendix 1 at the end of this document displays major study topics across the various countries in which research is currently underway.

1. Physical Facilities and School Construction. In conjunction with the Academy for Educational Planning and Management in Pakistan, BRIDGES is analyzing data from a national sample of 2500 schools in order to identify which (sets of) facilities are most closely linked to higher school averages in the 6th grade examination. The study will assess whether the government should implement a policy that specifies the minimal set of physical facilities that all schools must have. Similar research is being carried out in Thailand and in North Yemen. Completion of these studies will broaden existing knowledge about the benefit/cost ratio of different investments in physical facilities.

The presence of facilities is also closely linked to participation in schooling. Research in Egypt (carried out by Creative Associates, 3201 New Mexico Ave. N.W., Suite 270, Washington, D.C. 20016) has shown that construction of a school building within a minimal distance from a population is the single most important action that governments can take to maximize enrollments, especially that of girls. BRIDGES research in Pakistan will assess the impact of other options for provision of facilities, such as the use of local mosques as schools. Initial studies suggest that families will permit their daughters to be schooled by a male teacher in a mosque but not in an all male public school.

2. School Management. Countries poor in resources cannot provide enough teachers and well-equipped buildings for the students who wish to enroll. Can schools be grouped in ways that permit sharing of equipment and teachers across communities? Research in Sri Lanka and Thailand is evaluating the effectiveness of several varieties of school clustering to determine which are most cost-effective in terms of increased enrollment and improved quality of instruction.

The Sri Lanka study also will evaluate the success of ministry policies designed to increase headmasters' initiatives in curriculum development, and to mobilize local resources for school support. Are programs initiated by ministries of education to increase the leadership capacity of school administrators cost-effective in terms of internal efficiency or learning outcomes of schools?

Ministries can affect unit costs of education by changing class size, instituting double sessions, combining grades, and other forms of class and school reorganization. Studies in Burundi, Pakistan, and North Yemen will assess the effectiveness of these policy options.

By 1980, Kelly (1986, *ibid.*) reports that male/female enrollment rates were as follows:

- for ages 6-11: in Africa, 67% for males and 30% for females; in Asia, 43% for males and 29.7% for females; and in Latin America, about the same for males and females.
- for ages 12-17: in Africa, 44.1% for males and 30% for females; in Asia, 43% for males and 29.7% for females; and in Latin America, 65.4% for males and 62.7% for females.



Research in Pakistan, Thailand, and North Yemen will assess policies with respect to the inspectorate or supervisory system. Some educators argue that learning would increase if there were fewer supervisors interrupting the work of teachers. The BRIDGES studies will identify those supervisory tasks that have been most effective in terms of positive learning outcomes.

3. Teacher Characteristics and Teacher Training. Two groups of policy options are included under this category: those that refer to recruitment and selection of teachers; and policies concerning the method and content of teacher training. Recruitment and selection research attempts to identify the teacher characteristics that are associated with high levels of retention and student learning and could be used to select teachers. Studies in Burundi, Pakistan, Thailand, and North Yemen include teacher characteristics variables in their design.

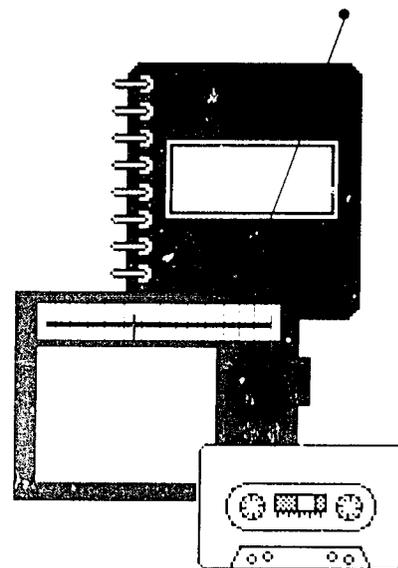
Research on teacher training can also contribute to policy making by comparing the relative effectiveness of different methods of training (e.g., pre-service versus in-service training), the content of training (e.g., pedagogical methods versus knowledge of the subject to be taught), and specific methods of teaching (e.g., use of textbooks, use of teacher guides, methods for multigrade classrooms, methods of assessment of student learning, and general use of instructional resources, including classroom time). Comparisons of pre-service versus in-service training are abundant in the research literature and will not be carried out by BRIDGES.

Research on the teacher training programs of the Open University of Indonesia will examine the relative costs and impacts of pedagogical versus subject content training. Special attention will be given to the use of modular instruction units for teacher training.

Most BRIDGES research in this domain will focus on what is called classroom management which refers to how teachers allocate instructional resources to improve learning outcomes. Studies in Burundi, Pakistan, Sri Lanka, and North Yemen are collecting detailed information on broad teaching strategies that could be taught through either pre-service or in-service programs, and which could be incorporated in teacher guides. Special attention will be given to the use of homework, textbooks and other instructional materials, assessment practices, and methods for developing students' conceptual abilities. In Thailand, BRIDGES research examines the effect of using Reduced Instructional Time, a package of policies that affect how teachers allocate time to the instructional task. The research methods include both quantitative studies that will identify instructional strategies associated with high levels of student learning, and detailed qualitative studies of strategies used by successful teachers.

4. Learning Technologies. Teacher training research is closely linked to research on learning technologies. Here the policy issue is: what sets of technologies (e.g., textbooks, radio, programmed instruction, Reduced Instructional Time, educational television) are most effective and least expensive both in terms of capital investment and in terms of recurrent costs?

In Indonesia, BRIDGES research will examine the cost-effectiveness of different methods of *distance* teaching for use in teacher training. The research will compare the relative advantages of different combinations of correspondence, radio, visits by monitors, and other factors. Similar studies on the effectiveness of distance methods for training teachers will begin this year in Sri Lanka and Thailand.



BRIDGES will also conduct a systematic synthesis of the experiences of various countries in the use of teacher-based technologies (in which programmed guides and re-designed instructional materials are the center of the technology), and in the use of interactive radio.

5. Information Utilization. Parallel to these studies on the effectiveness and cost of policy options, BRIDGES is carrying out studies of ways to present information that will facilitate its use by policy makers, planners, and managers. The results of the policy studies described above will be incorporated into planning tools and simulation models designed to enable users to see the likely effects of changing current policies. The models to be developed in 1988 are described below (see page 12, *Software*).

Research on information utilization is intended to assess what information is required by planners, policy makers, and managers, and to suggest how simulation models and planning tools should be constructed. In Egypt and Pakistan, BRIDGES is working with ministries of education to develop improved instruments and procedures to collect basic statistical information about schools, teachers, and students. At the same time, BRIDGES is developing methods for analyzing these statistical data to provide indications about costs and effectiveness.

6. Access to Schooling. Access to schooling is emerging as an integrating theme that links the research domains in several participating countries. In order to suggest relevant policy options for improving access, the research agenda examines both supply and demand issues within a broader context that often relates the issue of access to issues of teacher training and school facilities.

For instance, in Pakistan, where there is a shortage of women teachers, parents will usually not send their daughters to school when the teacher is male. Yet, when ministry of education funds are spent on employing a teacher and allowing for a salary supplement for the mullah, a mosque can become the site for providing the first two years of education. Parents **will** send their daughters to attend a mosque school when the teacher is male.

A shortage of trained women teachers precludes the opening of girls' schools in many rural areas of Pakistan. If schools are built, who will teach in them? Along with considering what kind of education can be provided, should policies allow for the hiring of untrained teachers? Do requirements such as school uniforms reduce equality of access to schooling?

The studies of Pakistan and North Yemen also examine the demand for education by looking at how cultural, religious, family, and individual factors affect access and retention in school. Common themes that emerge from the six country studies on access are the issues of gender equity and the equitable distribution of educational resources across the rural and urban sectors.

In addition to the policy studies on access, and through a collaboration with the Women in Development Office of USAID, BRIDGES is developing three data bases that describe the participation of women in education. One data base will provide general statistical information about enrollment of girls in school and gender of teachers, drawing on research from 75 countries; another will give more detailed information for 15 countries; and a third data base will provide highly detailed information, including text descriptions of policies affecting participation of girls in four countries. The data bases will be used on a micro-computer, accompanied by software that will permit users to access variables and conduct simple analyses.



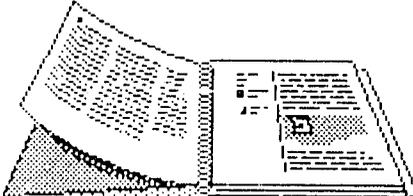
"Overall participation rates for Pakistan are, for boys, 64%; and for girls, 33%. Urban rates for both boys and girls are 68%. Boys participation rates in rural areas are 44%; girls are 21%. Seventy percent of the total population of Pakistan lives in rural areas."

Mary B. Anderson
The BRIDGES' Forum
No. 1, January 1988

E. Methods for the Dissemination of Policy Studies

The results and implications of policy studies carried out by BRIDGES and others are disseminated in three major ways:

1. publications, both for researchers and specifically for policy makers
2. microcomputer-based software that displays results, and permits users to examine the implications of policy options in their own education systems
3. training and conferences to provide staff of ministries of education and others with the tools necessary to carry out further policy studies



1. Publications. The first issue of the *BRIDGES Research Report Series* entitled, "Access to Schooling in the Third World: An Overview," by Mary B. Anderson, appeared in March, 1988. A second review will be ready for publication by May, 1988; and another two in June, 1988. During the next several years a total of 20 documents will appear in this series, providing reviews of policy research on determinants of school performance, and reports of BRIDGES research on specific policy options for improvement of learning outcomes, retention, access, and costs.

The Project also publishes *The BRIDGES Forum*, a bi-monthly bulletin that provides a summary of activities, emphasizing research generated by institutions and researchers in the participating countries. This *Forum* is directed toward Project participants, USAID, and other international assistance agencies.

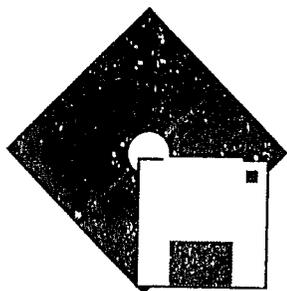
2. Software. In fiscal year 1987, BRIDGES introduced an operating version of the System for Tracking Educational Progress (STEP), a software package for microcomputers designed to greatly facilitate the work of educational planners. This tool uses readily available enrollment, cost, and population data, permitting users to specify values in the context of their systems on a number of parameters, and generates projections of enrollments and costs. Users can specify which current parameters will remain constant and which will change, and can choose among three types of projection curves. The software requires about 4 hours of training for persons familiar with conventional commercial software packages, and runs on IBM-compatible machines. In FY88 BRIDGES will install the STEP software packages in Burundi, Egypt, and Pakistan.

The initial version of STEP (called PETS) was developed through a buy-in from the Latin America and Caribbean Bureau of USAID, and is being used by USAID missions in Belize, Costa Rica, El Salvador, Guatemala, and Honduras.

BRIDGES has four other software packages in development. The first, which will link into STEP, will generate the resource requirements (teachers, buildings, equipment, materials) implied by changes in enrollments by grade and level. The software will allow users to change class size, school size, equipment specifications and other factors. The projection of these factors is an important part of educational planning. This software, therefore, is referred to as a planning tool. It will be used principally by technicians in ministries of education.

A second model will permit users to choose among policies that differ in: amount and distribution of physical resources, selection and training of teachers, type and use of learning technology, school organization, school administration, and methods of implementing curriculum. At the same time, it will help users to

A *simulation game provides users with an increased awareness of the interrelationships among variables within an education system.*



see the effect of their choices on: levels of costs, enrollment rates, measures of retention, and learning outcomes. Users will be able to specify the environmental factors that affect learning in their own country, and to set current values on policies in their system. With this information the model will generate index numbers that refer to current levels of learning outcomes, costs, enrollment rates, and retention measures. The users will then be able to change policies, and to observe the effects of these changes on the levels of outcome measures. This educational policy model is intended to be used principally by planners and policy makers.

A third model will allow users to observe the effects of major policy changes in the education system on other sectors, such as employment, economic productivity, health, and nutrition. The model will also allow users to see the likely impact on education of changes that occur in society in employment, economic productivity, health, and nutrition. This intersectoral model is intended for use by policy makers in education and national planning offices.

A fourth software package will ask users to specify a type of education policy or program that they would like to implement in their system. The software will then use questions to establish basic features of the situation in which the policy or program will be implemented. Using reports of research and experience in other countries, the software will indicate the kinds of implementation difficulties that are likely to arise, and the most effective ways to overcome them. This implementation model is intended for managers of education programs, for example, Director-Generals of Primary Education.

BRIDGES will develop an interactive data base that permits a user to explore the range of factors associated with access to education, costs, and levels of learning. This data base will incorporate research findings from research reviews and from BRIDGES original research. It will then make research results available in a form easily understood by educators.

BRIDGES will also develop and test an experimental version of a heuristic simulation device, based on concepts of simulation gaming. The product will permit users to experience some of the major decision situations encountered in the planning and management of an education system. The simulation game will provide users with an increased awareness of the interrelationships among variables that affect the performance of an education system. The gaming situation will permit simulation of problems currently too complex to be modeled using algorithmic procedures.

3. Training and Conferences. BRIDGES training programs include small workshops and seminars organized around policy studies, as well as more formal training associated with the introduction and installation of software packages. This year BRIDGES will offer a four-week intensive training workshop on educational planning and policy analysis, which provides exposure to microcomputer applications. In August of 1987, the first course of this kind was held at Harvard University in Cambridge, Massachusetts, and was attended by 14 planners from Botswana, Guatemala, Pakistan, and North Yemen.

The Project will also experiment with different ways to report research results to decision makers in education systems. In North Yemen, the Project will present research results using seminars, brief abstracts, and long reports, and will work with decision makers to identify the forms that would be most useful to them.

In January, 1988, BRIDGES held its first International Conference. Representatives of the various governments participating in the Project, representatives of USAID, and BRIDGES researchers met to discuss a research agenda for studies on policies to improve educational quality.

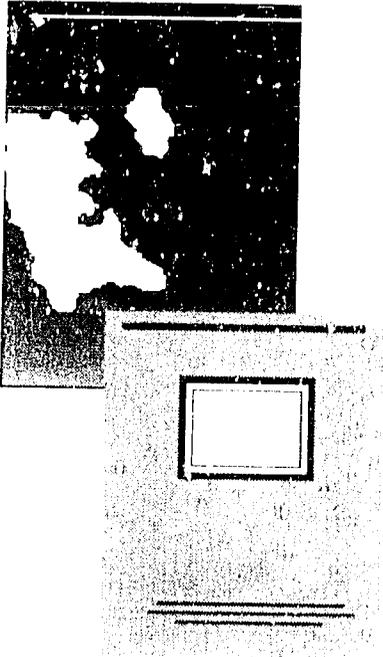
F. Accomplishments to Date

1. Synthesis

- Twenty-eight state-of-the-art reviews on educational policies and practices in developing countries were prepared in draft form (see Appendix 3).
- Organization of workshops that brought together review authors and education officials were held in Santiago, Chile and Bangkok, Thailand; meetings in the United States brought together review authors and researchers.
- State-of-the-art reviews were prepared for distribution to institutions participating in the BRIDGES Project, ministries of education, educational research centers, offices of USAID and other international development agencies.
- An original research report on enrollment, repetition, and dropout rates in Honduras was prepared in draft form.
- Four training manuals were prepared in draft form.
- Six research papers were prepared in draft form.

2. Generation of New Information

- Policy relevant research questions were identified and feasible research designed in collaboration with education officials. Research activities were begun in Burundi, Pakistan, Sri Lanka, Thailand, and North Yemen. A research project was designed in Indonesia to be implemented in the coming year.
- The first year's research activities have produced a series of reports, which have been discussed with decision makers.



3. Systems of Presentation

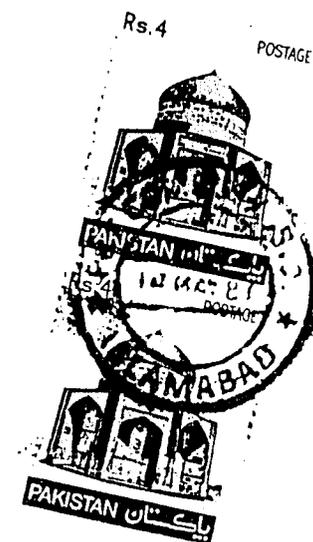
- *Software.* During the first year, BRIDGES developed a software package that uses ministry-supplied data from two or more consecutive years on student enrollments, classified by age and grade, to calculate "flow" rates (promotion, repetition, and desertion of primary school students). Research demonstrated that the ministry of education estimates of these rates are often unreliable.

The software package, the System for Tracking Educational Progress (STEP), permits the user to compare enrollment projections using official promotion and repetition rates with those generated by the package, and to print enrollment projections under varying assumptions of flow rates, as well as the expected rate of change of these rates over time. (Copies of STEP are available from BRIDGES at cost.)

4. Training

- *Country-Specific Training.* In anticipation of FY88 research activities, training was carried out in Pakistan, Sri Lanka, and Thailand by BRIDGES country-teams to provide host-country researchers with skills in qualitative research methods, survey skills, and case study design methods. In Pakistan, policy makers reviewed educational policy making and analysis procedures. In Egypt, a three-week introductory course in the use of microcomputers for educational planning and management was provided for 45 staff officers from the central ministry and the local governorate offices of education.

- *Across-Countries Training.* In August 1987, BRIDGES offered its first intensive training workshop which provided skills and conceptual training in the planning, microcomputer, and management information fields. (See Appendix 2.)



G. Activities for FY88 (October 1, 1987-September 30, 1988)

1. Generation of New Information

- The research activities of Project BRIDGES will, in FY88, be in full swing in: Burundi, Egypt, Indonesia, Pakistan, Sri Lanka, Thailand, and North Yemen.
- The research associated with the Women in Development Project initiated under USAID sponsorship will be completed, and a final report issued.
- In addition, BRIDGES will carry out a brief education sub-sector survey in Cameroon.

2. Systems for the Presentation of Information

Software:

- During the second year, BRIDGES will install the STEP software package in Burundi, Egypt, and Pakistan.
- BRIDGES is also developing three additional modules for STEP: a routine for projecting school age population and children entering school under different assumptions; a routine for projecting requirements for facilities, teachers, and equipment given enrollment projections and user-specified assumptions about class and school sizes; and a routine for estimating the costs attached to the projection of enrollments, facilities, teachers, and equipment.
- BRIDGES is also developing a prototype version of a non-hardware simulation game designed to expand the understanding of policy makers and planners about the complex interactions going on in their organizations. This heuristic simulation will use techniques of simulation gaming that have been employed with great success in other professions.

- BRIDGES will also develop an interactive data base which provides the user with a way to explore the variables that influence access to education, costs, and learning levels.

Publications:

- Two reviews in the *BRIDGES Research Report Series* will be published by April, 1988, and two more reviews will be ready for publication by June. These documents will include research reviews on determinants of school performance, as well as reports of BRIDGES research on specific policy options aimed at improving access, retention, costs, and learning outcomes. Information about all the reviews, including those in draft form, will be disseminated through professional associations and journals, international assistance agencies, and BRIDGES channels (see Appendix 3).

- BRIDGES plans to publish a *Research Digest* written for policy makers that will summarize the policy implications of both reviews and original research reports.

- BRIDGES will continue to publish the bi-monthly *BRIDGES Forum* to provide summaries on host country activities.

3. Training and Conferences

- BRIDGES will conduct its second educational and policy analysis workshop session in the summer of FY88 for researchers and officials from participating countries.

- The first BRIDGES International Conference was held in January, 1988. Participants discussed a research agenda for improving educational quality.



BRIDGES' First International Conference was held in January 1988 in North Carolina, USA. Participants included educational planners, policy makers, and researchers from countries participating in Project BRIDGES.

Appendix 1: Cross-country Research

Socio
Economic
Conditions

Physical or
Financial
Resources

School System
Management
Feedback Loops

Information
Systems

Access
School/Comm.
Relationships

Burundi

Egypt

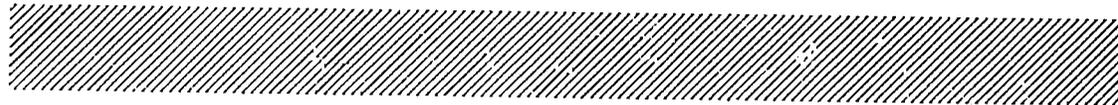
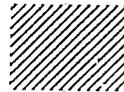
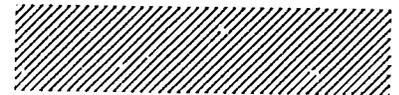
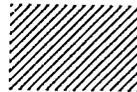
Indonesia

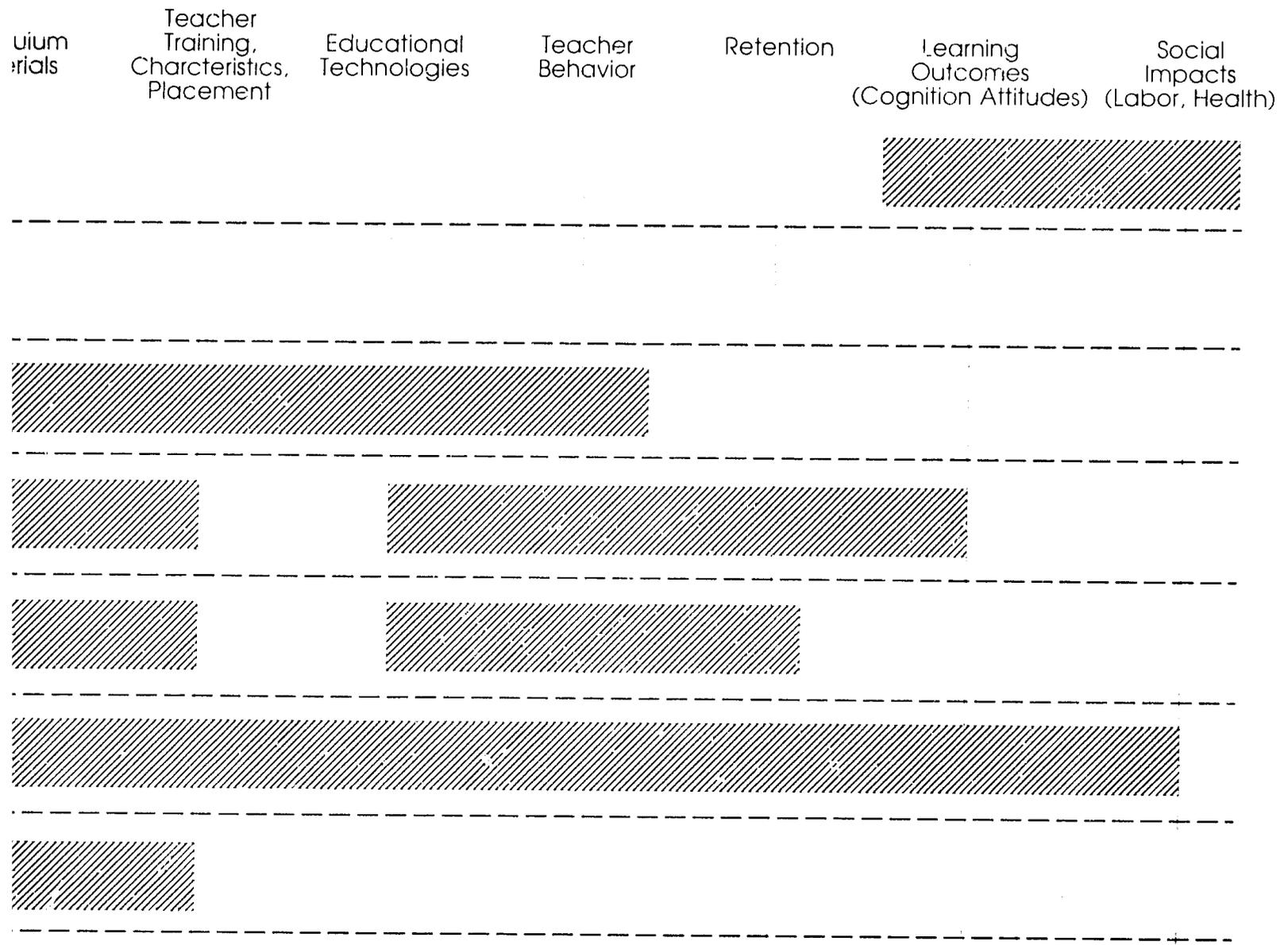
Pakistan

Sri Lanka

Thailand

North Yemen





Appendix 2: Cross-country Training

	Type of Activities	Targeted Groups
Burundi	<ul style="list-style-type: none"> • Training of data collectors • Basic field research techniques 	<ul style="list-style-type: none"> • Ministry of education; researchers • Hire research assistants
Egypt	<ul style="list-style-type: none"> • Basic training course in computers • Course on microcomputers for planning 	<ul style="list-style-type: none"> • Public sector professionals • Educational planners • Statisticians • Regional civil servants
Pakistan	<ul style="list-style-type: none"> • Training seminar • 3 day workshop and questionnaire design 	<ul style="list-style-type: none"> • Academy for Educational Planning and Management
Sri Lanka	<ul style="list-style-type: none"> • Training of field researchers (qualitative methods) • Training of data processors 	<ul style="list-style-type: none"> • Research associates • MOE research unit staff
Thailand	<ul style="list-style-type: none"> • 4 day training workshop • Training workshop for pilot study 	<ul style="list-style-type: none"> • Field researchers
North Yemen	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Women in Development	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Across Countries	<p>Cambridge, MA, USA, skills training; Management Information Systems; STEP; Lotus 1,2,3; RBase V; educational planning.</p>	<p>Group Size 14, educational planner, professional staff working in educational planning units in participating countries</p>

Objectives

Skills Transformation

Training Applications

<ul style="list-style-type: none"> • Design and implementation of survey • Design and production of field research instruments • Basic skills in data collection 	<ul style="list-style-type: none"> • Basic research skills 	<ul style="list-style-type: none"> • Skills to be applied in the design, planning, and implementation of a pilot survey
<ul style="list-style-type: none"> • Introduction to microcomputers • Introduction to Lotus 1.2.3 • RBase V • Systems management 	<ul style="list-style-type: none"> • Basic computer skills • Basic planning skills 	<ul style="list-style-type: none"> • Improved planning procedures • Application of computers in the management of information within the public sector
<ul style="list-style-type: none"> • Review of Pakistan education • Policy issues • Questionnaire design • Field testing questionnaire 	<ul style="list-style-type: none"> • Policy analysis skills • Questionnaire design and application skills 	<ul style="list-style-type: none"> • AEPAM: policy analysis upgrade • Preparation for natural survey
<ul style="list-style-type: none"> • Naturalistic field research methods • Participant observation • Theme analysis • Uploading and downloading research data • Use of microcomputers 	<ul style="list-style-type: none"> • Qualitative field research methods • Production of field research manual • Microcomputer data storage skills 	<ul style="list-style-type: none"> • Implementation of school cluster study • Principal study • Processing field research data • Basic data analysis using a micro-computer
<ul style="list-style-type: none"> • Qualitative field research methods • Multi-site case methods • Case study of effective school cluster 	<ul style="list-style-type: none"> • Participant observation • Analysis of quantitative data • Implementing pilot case study 	<ul style="list-style-type: none"> • To carry out BRIDGES research program in Thailand during 1988
<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None yet 	<ul style="list-style-type: none"> • None
<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None yet 	<ul style="list-style-type: none"> • None
<ul style="list-style-type: none"> • Planning skills • Project implementation skills • Policy analysis skills • Logic analysis • Computer skills 	<ul style="list-style-type: none"> • Intermediate computer skills • Application of MIS in planning. • Understanding of the educational planning process 	<p>Training will be applied in the reorganization of counterpart planning processes. Improved application of planning procedures to educational policy making. Upgrading of the efficiency of host country planning units.</p>

Appendix 3: State-of-the-Art Reviews of Research on Education in Third World Countries Completed Under the BRIDGES Project

I. In final stage of review for publication

1. *Anzalone, Stephen*. "Using Instructional Hardware for Primary Education in Developing Countries: A Review of the Literature"
2. *Cassidy, Thomas*. "Microcomputer-based Models & Modeling Systems Software for Educational Planning"
3. *Montero-Sieburth, Martha*. "Instructional Strategies & the Allocation of Learning Resources"
4. *Schulle, John, and Others*. "Recognizing, Fostering & Modelling the Effectiveness of Schools as Organizations in Third World Countries"
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II. Currently Being Reviewed for Publication

6. *Eisemon, Thomas*. "Benefiting from Basic Education in Developing Countries: A Review of Research on the Educational Antecedents of School Effects"

7. *Munoz Izquierdo, Carlos and Sonia Lavin de Arrive*. "Strategies for Improving Access to and Perseverance in Primary Education in Latin America"
8. *Tsang, Mun C*. "Cost Analysis for Educational Policymaking: A Review of Cost Studies in Education in Developing Countries"

III. Other Submissions Waiting for Review

9. *Arancibia C., Violeta*. "Manejo Instruccionel del Professor en la Sala de Clases"
10. *Chang, Weining C*. "Variables Affecting Policies, Programs & Program Implementation in Access to School"
11. *Correa, Rosario*. "Revision de la Educacion Parvularia o Educacion Inicial en America Latina"
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14. *Eshiwani, George*. “Utilization of Examinations: A Review of Published & Unpublished Research from Eastern, Central and Southern Africa”

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16. *Gunawardena, G.B.* “Review of Research on Determinants of Effective Schools: Sri Lanka”

17. *Higdon, Bella*. “Teacher Education and Special Education”

18. *Kotliarenco, M. Angelica*. “Efectividad de la Educacion Preescolar en Educacion Basica”

19. *Ligons, Claudette Merrell*. “Teacher Education in the U.S.: Selected Implications for Third World Countries”

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21. *Moegiadi*. “Determinant of Effective Schools in Indonesia”

22. *Montero S.L., Patricio*. “State of the Art on Children’s Primary Education Contributions in the Areas of Work & Productivity”

23. *National Education Commission*

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24. *Pigozzi, Mary Joy*. “Literature Review on the Relationship between Facilities & Achievement”

25. *Reyes Mazon, Manuel*. “Teacher Training: A Research Review”

26. *Risan, James*. “Implementation & Use of Systematically Collected Data in Educational Decision Making - Generic Issues from U.S. Public Education”

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Papers

Clauset, Karl H., Jr. “The Dynamics of Project Implementation”

Cuadra, Ernesto and G. Ewert, “Comparison of School Records with Parents’ Information on Enrollment, Repetition, and Dropout: A Field Study in Honduras”

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Wheeler, Chris. "Data Collection Manual for Studying and Effective School Cluster in Thailand"

Participant List

The BRIDGES group includes educators, researchers, planners, policy makers, administrators, and technicians committed to improving opportunity and quality in Third World primary schools. The goal of their collaborative effort is to identify policies that will increase children's access to schooling, reduce the frequency of early school leaving and repetition, improve the amount and quality of what is learned, and optimize the use of fiscal and educational resources. With the Project now in its third year these goals are being met through the consistent work of a growing number of people.

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