



And Education for All

RTI has joined in a multi-institutional effort to make quality education more widely available to children in developing countries.

TWO TO THREE times a year the governors of Egypt's 25 provinces gather data on the status of their local education systems. They record the number of teachers, enrollment by sex and age, and the number and condition of school buildings. Then they pass this information on to the Egyptian Ministry of Education.

"However, it is usually a year before the information is available in a national data base," notes Dr. Scott Moreland, a Research Triangle Institute economist.

"So government planners are forced to base policy decisions on data that are out of date as soon as they are available."

To provide planners with more timely data, Dr. Moreland and his RTI colleague, Dr. Luis Crouch, have developed the System for Tracking Educational Progress, or STEP.

"STEP allows education planners and policy makers to keep track of and project a set of basic indicators for the primary level of an educational system," Dr. Moreland explains.

With STEP, a user can estimate the transition rates within a primary school system, project those rates into the future, project student enrollment into the future, and calculate various educational efficiency measures.

A school system's internal efficiency rate can be described by the percentage of students that graduate, how long it takes them to graduate, and how much they learn. External efficiency refers to how the quality of a nation's education system affects agricultural production,

employment, health, the economy, and general development.

Dr. Moreland and Dr. Crouch are currently introducing Egyptian planners to STEP. This educational planning software is already being used in five Latin American countries: Honduras, El Salvador, Guatemala, Belize, and Costa Rica.

STEP WAS DEVELOPED under a U.S. Agency for International Development-sponsored project called BRIDGES, an acronym for Basic Research and Implementation in Developing Education Systems. BRIDGES is a five-year project that began in October 1985. It is directed by the Harvard Institute for International Development and the Harvard Graduate School of Education. RTI is one of four subcontractors for the project. Others are the Institute for International Research in Washington, D.C., Michigan State University, and Texas Southern University.

The BRIDGES group includes educators, researchers, planners and policy makers, all of whom are working to improve the quality of education in Third World nations. BRIDGES staff also hope to make education more widely available to children in developing countries.

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To accomplish their objectives of more accessible, quality education, BRIDGES staff are providing Third World nations with tools to help them improve their planning and policy making.

"Through a series of interrelated activities, we're providing decision makers in several countries with information about various alternatives they can pursue to improve their nations' education systems," explains Dr. Moreland. "A major part of our work will be in Egypt, but we're also working with planners in Pakistan, Sri Lanka, Thailand, Indonesia, Burundi, and Yemen."

BRIDGES activities include research reviews and basic research, the results of which are being used to develop computer programs and models of education systems.

Through the research reviews, BRIDGES staff hope to synthesize what is already known about developing and maintaining quality education systems in Third World countries. They are preparing several of these reviews in collaboration with researchers from the Bureau of Education Research at Kenyatta University, Kenya; the Center for Research and Development of Education in Chile; and the National Education Commission of Thailand.

Pakistan is one of the countries where RTI staff will help planners improve their education system.

NEXT, THROUGH a series of research projects, BRIDGES staff are seeking to answer policy-related questions that have not yet been addressed adequately by other researchers.

Dr. John Lawrence, an RTI senior psychologist, is among those conducting basic research. In collaboration with researchers from Michigan State University and McGill University, he is designing a project to determine the linkages between education and employment in Burundi, a central African nation.

One of the priorities listed in Burundi's five-year plan is to promote small- and medium-sized businesses in the private sector. To do this, government officials realize they must provide citizens with appropriate education. The studies Dr. Lawrence and his colleagues are conducting will help determine what type of education is needed to train workers to fill the jobs that will become available if small businesses flourish.

Through meetings with Burundi's Ministry of Education and Ministry of Labor, BRIDGES staff have designed an overall research and development approach, as well as individual research studies that will help planners match education to the needs of the marketplace.

"We will be able to generalize what we learn in Burundi to a number of other developing countries, many of which face comparable problems," Dr. Lawrence notes. "Burundi is unique, however, in that the government is committed to improving labor market information and using it in education planning."

Research being conducted in Burundi is an example of the type of information that Dr. Moreland and Dr. Crouch will incorporate into the models they are designing.

"In the education field there are a number of policy issues from which to choose," Dr. Moreland notes. "For example, strategies for improving an education system could include building more schools, purchasing more text books, increasing teacher salaries, introducing new teaching methods, or a



combination of these strategies. And what might work in one setting or at one development level might not work at another.

"The research reviews and research projects play an important part in our work because they help us make accurate assumptions on which to base our models," he adds.

RTI's primary role in BRIDGES has been to provide educators, planners and policy makers with microcomputer-based planning tools. In many ways, BRIDGES builds on the expertise RTI staff gained during earlier projects that pioneered the use of microcomputer-based models in Third World nations.

"Under the IPDP and INPLAN projects (see page four), we developed education models for 12 countries, so when BRIDGES began, we were well aware of the types of planning and policy making tools that would help improve the quality of education in Third World nations," Dr. Moreland says. "We also had experience in developing these tools."

Host, the software system developed during INPLAN (see page six), has been used extensively in BRIDGES to tailor models to specific countries. And under BRIDGES, RTI researchers are continuing to develop Host further. Currently they are adding graphics capabilities to the RTI-designed software.

STEP, which was described earlier, is

one of the microcomputer planning tools RTI researchers have developed.

"We also have a general planning tool that is very useful for detailed nuts and bolts planning," Dr. Moreland explains. "This tool can be used to obtain accurate reports of existing educational conditions, and to generate valid estimates of anticipated educational needs."

STILL ANOTHER microcomputer tool being developed at RTI is a policy analysis model that can be used to examine alternative strategies for improving education in a developing country. Given a specific set of educational objectives and a budget for achieving those objectives, the model can be used to find the most cost effective way for a country to achieve its educational goals.

"In conjunction with this model, we are developing a microcomputer-based policy and planning game that teaches planners how to use the model," Dr. Moreland notes. "Last year we designed a similar training game for a population and development planning model. The game was taken to Moscow in November 1986 for use in the United Nations-sponsored training course for planners from several African and Asian countries.

To acquaint potential users of the models with their policy and planning

The model can be used to find the most cost effective way for a country to achieve its educational goals.

capabilities, RTI staff also offer intensive training sessions in conjunction with Harvard. And this August, Harvard organized a month-long workshop on models and microcomputer-based methods for educational policy analysis and planning. Over 20 educational planners from Pakistan, Yemen, Indonesia, and other countries attended the workshop. RTI staff provided instruction on how to use the BRIDGES microcomputer-based planning tools.

In addition to the technical challenges of designing models and training people to use them, RTI researchers have found they face another challenge in their efforts to introduce sophisticated planning tools into developing countries. In Third World nations, offices where microcomputers will be used are not always supplied with a constant, reliable source of electricity, nor are they uniformly cool and clean.

In spite of these obstacles, many Third World planners are quick to see the utility of the microcomputer-based planning tools, Dr. Moreland notes. They are eager to use this new technology, even under conditions that are less than ideal. □



Dr. Luis Crouch and Dr. Scott Moreland leave for Egypt to show planners there how to use the System for Tracking Educational Progress.