

PA-ABY-444
ISBN 99036

IEQ Biennial Report Publication #2

**IMPROVING EDUCATIONAL QUALITY:
A NEW APPROACH**

Don Adams

with Mark Ginsberg, Yidan Wang and Judy Sylvester
University of Pittsburgh

January 1995



Institute for International Research

1815 North Fort Myer Drive #600

Arlington, VA 22209 USA

Telephone: (703) 527-5546

Fax: (703) 527-4661

In collaboration with Juárez and Associates, Inc. and the University of Pittsburgh

PN-ABY-444

IEQ Biennial Report Publication #2

**IMPROVING EDUCATIONAL QUALITY:
A NEW APPROACH**

Don Adams

**with Mark Ginsberg, Yidan Wang and Judy Sylvester
University of Pittsburgh**

January 1995

The Improving Educational Quality (IEQ) Project is funded by the Center for Human Capacity Development, United States Agency for International Development (USAID) under Contract No. DPE-5836-C-00-1042-00. The IEQ Project is directed by the Institute for International Research (IIR) in collaboration with Juárez and Associates, Inc., and the University of Pittsburgh.

The views expressed in this document are those of the Improving Educational Quality Project and do not necessarily reflect those of the United States Agency for International Development.



Improving Educational Quality A New Approach¹

*Don Adams, University of Pittsburgh
with Mark Ginsburg, Yidan Wang and Judy Sylvester²*

INTRODUCTION

The 1980s and 1990s have seen increased international concern for educational quality.³ Dissatisfaction with costs of rapid expansion of educational systems, disillusion with the apparent growing lack of fit between schooling and the world of work, and a general concern over the low level of basic cognitive skills, even among those completing programs of basic education, have given impetus to the search for new, more effective and efficient models of education. The increased interest in educational quality, typically defined in terms of student achievement, has been further stimulated by ripples of optimism flowing from a body of empirical research which, in developing countries, suggests that certain manipulable school inputs can affect average student achievement, and which, in industrialized countries, seems to conclude that the characteristics of high quality schools are not only known, but to a degree, are common across a range of cultures. This renewed attention on quality, to some extent, has shifted the focus of educational debates and reforms from educational growth and efficiency to the discovery of those combinations of inputs, processes, and outputs which are assumed to define or cohere to improved patterns of education for all children. The Jomtien World Conference on Education for All in 1990, and the subsequent national colloquia it fostered, helped to further focus rhetoric and stimulate debates on educational quality, its meaning, and its social and individual benefits.

There is another international trend which, although not exclusively concerned with educational quality, is influencing educational policies and strategies for improving educational quality. Partly in response to the perceived weaknesses of top-down policies and attempts at expert-driven, programmatic development of educational reform, there has been increased experimentation with various forms and meanings of educational decentralization and center-local partnerships.⁴ These experiments often have been accompanied, in descending order of frequency, by changing responsibilities with respect to the financing of basic education, new choices in curriculum and school community relationships, and, least frequently, personnel decisions. This downward shift in responsibilities has meant increased involvement of lower governmental echelons, school administrators and, at times, teachers and parents, as participants in educational decisions.

Related to these two trends is the emergence of two correlative ideas. The first idea is linked conceptually to the action research tradition. Action or instrumental research is a concept and methodology which resists precise definition, usually refers to research which involves teachers as researchers, sometimes by themselves and sometimes in collaboration with academic researchers, and serves, among other goals, the professionalization of teachers by helping them develop and validate their knowledge. There is an increasingly accepted proposition that lasting improvements in educational quality, whether defined in

terms of basic skills, critical thinking, self-esteem or other pupil learning, must include an in-depth understanding of the current conditions at the classroom and school levels.⁵ National reforms emanating from the center can facilitate major adjustments in the design, scope and delivery of educational services, but rarely are sufficient to foster fundamental changes in teaching and learning. However, action research, responding to the limitations of externally driven reform, reflects a commitment to focus on the classroom and is directed toward improving educational quality through the iterative process of research and practice. Action research is expected to lead to action planning and implementation.

The second and closely related idea is signaled to some extent by the international trend away from an exclusive reliance on detailed educational plans and mandates from the center and is associated with a reconceptualization of the process of planning educational change.⁶ There is an emerging view among educators that rejects technicist approaches to change which emphasize the traditional linear planning sequence (i.e., goal setting--needs assessment--program specification--target identification--evaluation) and is redefining the process of initiating and sustaining educational change as an iterative, participatory process which involves, and preferably begins with, critique, evaluation, analysis and feedback at the school and local levels. As defined here, educational planning or, more specifically, the planning of educational change overlaps conceptually and operationally with action research.⁷

The Improving Educational Quality project (IEQ), initiated in 1991, is a five-year, USAID-funded project whose main objective⁸ is to identify practical ways to improve learning in classrooms and schools within the context of national educational reforms in selected developing countries. In the three countries supported under the core contract--Ghana, Guatemala, and Mali--IEQ has formed partnerships with one or more host-country institutions to: assist in the enhancement of country research capacity and application; collaboratively design and implement classroom research at the primary school level; and link findings to practice and policy at various levels (from classrooms to national ministries) of the educational systems. Research teams composed of local researchers and, over time, teachers, observe and study classrooms and interpret findings. Feedback to, and dialogue with, teachers, headteachers, district level supervisors, and parents are integral to the research process; and, as appropriate, teachers from other regions and officials from the Ministry of Education become actively involved in reviewing and analyzing the process and results.

The conceptualization and the operationalization of IEQ is embedded in, and reflects trends and ideas beginning to emerge and coalesce in, the 1990s. By having one of its foci on improving pupil performance, IEQ shares a central thrust of recent international trends. In its commitment to a process of integrating new, research-based knowledge into the on-going operation of all levels of the countries' educational systems, IEQ reflects both trends in action research and the emerging reconceptualization of the planning or guiding of educational change as a locally-initiated, flexible, participatory, action-oriented process.

The IEQ project is first and foremost concerned with research, analysis and intervention at the classroom and school levels. This concern is operationalized as an attempt to capture both classroom experiences and experiences of individual pupils. Consequently, IEQ research examines how children of different characteristics (gender, language proficiency, ethnicity) interact with ongoing or modified school practice. Additionally, the types of data collected lead to profiles of more and less effective classrooms. Knowing how individual pupils perform is a necessary but insufficient condition for identifying, developing and sustaining changes that improve educational quality.

The remainder of the paper is devoted to: 1) elaborating the relationships between IEQ and the two basic bodies of recent international research on educational quality; and 2) analyzing the distinctiveness of IEQ in its attempt at combining collaboratively-designed and locally-conducted classroom research into a radiating process of improving education in sample schools and concomitantly influencing practices and policies affecting the larger educational systems.

- PATTERNS OF RESEARCH ON EDUCATIONAL QUALITY

Research on educational quality may be categorized roughly in two methodological and conceptually distinct groups. The first group of studies focuses on the effect of various environmental and school resource inputs on student achievement. The second group of studies, largely developed during the late 1970s and 1980s, focuses more on the internal social processes and educational practices of schools. Both categories of research have been extensively and competently reviewed. The purpose here in discussing this research is only to sketch the broader research context in which IEQ has been developed.

Studies of the Effects of Schooling

Basically these studies, often using large sample sizes, attempt to examine the impact of a number of variables hypothesized to be significant determinants of student achievement. Selected in-school variables may include, for example, per-pupil expenditure, instructional facilities, class size, and teacher and administrator background. Common out-of-school variables are the economic level of community, educational level of parents and family income. Frequently, this model assumes a linear and additive relationship between a set of explanatory variables and a standardized measure of students' achievement outcomes. Multiple regression and similar approaches make it possible to examine the relative importance of the many possible quantifiable independent variables associated with what students learn. Such techniques have been increasingly employed to determine the proportion of variance in achievement explained by student background and school-related resource inputs. This approach to the study of educational quality is built on a variety of assumptions, the most relevant ones for this paper are: (1) many educational objectives are the same from one school to another and even from one country to another and (2) much of the educational process linking inputs to student performance is universal rather than situation specific.⁹ Under these assumptions, results from empirical studies, replicated in multiple countries, warrant generalization and thereby have both theoretical and policy implications.

Many of the studies on the effects of schooling carried out in industrialized countries concluded that variation in in-school factors, as compared to student background characteristics, explained little of the variance in pupil achievement. These results led to a questioning of the wisdom of increased investment in education. In contrast, research in developing countries seemed to suggest that certain in-school factors could be important, a finding leading to encouragement by international and national agencies of particular educational policies which emphasized one or more school inputs. For the last several years one of the favorite inputs for external support has been textbooks, or more generally, instructional materials.

The conceptual and methodological criticisms of studies on effects of schools fill many volumes.¹⁰ At best, such studies, when using meaningful indicators and multilevel analytical techniques, have been very suggestive in terms of the priority of resource inputs to most effectively attain higher student achievement. However, as two scholars conclude: "... ultimately they [these research techniques] are limited

in their ability to determine what will actually work when it is tried out. Only action - in the form of instrumental research and action research - can really tell us what are the causes that will lead to desired effects."¹¹

One major distinction between this general approach and the IEQ research lies in the attention given by the latter to differences in school cultures and environments and to the complexities of the schooling process. For example, the focus on instructional materials in studies on the effects of schooling, in contrast to IEQ research, has been on production and distribution, e.g., making textbooks and teachers' manuals available at the school level, and has largely ignored school organization and the dynamics of instruction and learning through which such instructional materials are or are not used. Since IEQ is committed to analysis, design, and evaluation of conditions of classroom practice, less attention is given to relationships between "passive" indicators of input and output. The IEQ experience suggests, for example, that centrally produced textbooks, even if delivered to schools, may be infrequently and ineffectively used by teachers and often are inappropriate for abilities of many students.¹²

Another distinctive characteristic of the IEQ project, consistent with strategies which involve center-local partnerships, is that local researchers provide leadership for design of the research, interpretation of results and participate in the dialogue about ways of improving educational quality. Thus, as conceptualized in the project design the local researchers are much more than data collectors and continue to play vital roles, including furthering the dialogue on interventions and technical assistance, as the project evolves. This extended involvement gives researchers participation in important national and international forums.¹³

IEQ is also forging a new path by analyzing educational quality in school settings which includes those traditionally ignored, i.e., rural, isolated, primary school classrooms. The project accepts the assumption that quality can and does exist in poor rural schools, and through the action-research, classroom-focused process in which IEQ is engaged, teachers and headmasters will be able to improve the educational quality of their classrooms by using existing resources in new and different ways.

Effective Schools Studies

Perceived limitations of the model of research reviewed above and the widespread belief among educators that some schools are demonstrably more successful than others stimulated interest in a school-focused approach to the study of pupil achievement and performance. Commonly known as effective schools research, this approach reflects an underlying assumption that the organization and culture of the school and the behavior of the teachers and administrators do affect student performance. Performance remains mostly defined as achievement on standardized tests although some attention is given to curriculum-based assessments. Studies of the relative effectiveness of schools, initiated in the U.S. and England¹⁴ and subsequently introduced to other countries in Europe and other regions of the world, led to the generation of many descriptions of characteristics of effective schools. Factors of effectiveness typically included: instructional leadership by the principal, an emphasis on basic skill areas (i.e., reading and mathematics), high expectations for pupils by teachers, enhanced time on task by pupils, an orderly school environment, and frequent assessment of pupil progress.

There have been efforts at translating conditions associated with effective schools into checklists for quick assessment of the quality of individual schools in developing countries. Such checklists are designed to be used by supervisors or possibly headteachers to identify areas of needed improvement.

Although not rejecting the utility of such attempts at establishing quality benchmarks in informing discussion about educational quality, the IEQ approach develops strategies to modify classroom practices built on in-depth knowledge of local instructional and learning conditions and on an understanding of the feasibility of introducing changes in classroom behavior.

Effective schools research pushed analysis beyond the static characteristics of educational environment to examination of the more complex and interactive process of schooling. However, the emphasis of these studies tended to be on factors outside the classroom, to managerial abilities and style rather than teacher behavior and motivation. Moreover, critics have noted that using school level indicators or aggregating student data to the school level can mask differential effects of factors on different groups of students in the same school.

The research on effective schools is rich with suggestions about the conditions and relationships associated with school effectiveness. The more sophisticated studies in this body of research also provide a number of cautions that educators and policy makers involved in reform would do well to bear in mind. In the attention given to the internal context of schooling this research shares with IEQ a common interest. Another similarity with IEQ lies in the recognition that in any given community or school consensus may be lacking on the meaning of quality.¹⁵

However, the effective schools research, in spite of claims of some of the researchers, is unlikely to provide prescriptions readily adaptable across societies, regions or even school sites. Moreover, and more importantly, in the context of comparisons with IEQ, and in spite of much misunderstanding, the effective schools research says little directly about the process of improving education, that is, implementing the policies and practices derived from such research activities. In this regard effective schools research resembles studies reported above on the effects of schools. By contrast, a major part of the IEQ mission is to expand connections of new insights and information with practice. Developing such a linkage implies not only communication between researchers, teachers and administrators but also integrating research knowledge and practice knowledge with planning and policy knowledge. In Guatemala, for example, workshops involving local researchers, supervisors, teachers, and Ministry representatives focused on the examination of research findings in the context of the actual classroom experiences, providing not only information on new instructional approaches but also fostering reflection on necessary decisions and feasible actions to improve educational quality.¹⁶

RETHINKING THE PROCESS OF INITIATING AND SUSTAINING RESEARCH-BASED EDUCATIONAL CHANGE

Paralleling and reinforced by the frequently unsuccessful attempts to translate studies of educational quality and effectiveness into policies and programs has been an attempt to reconceptualize the process of initiating and sustaining educational change. Traditionally in most countries, and particularly in developing countries, the linkages are weak between educational research and practice and also between research and planning. Research is often said to generate knowledge whereas those engaged in practice and planning are seen as applying knowledge. These linkages are constrained by a typical division of roles and responsibilities wherein the central educational authorities are expected to initiate reforms and innovations and local schools are expected to participate, largely as implementers.

Those who seek to build a new model try to avoid what they see as two important weaknesses of past approaches to planned educational innovations and reform:

- (1) top-down or centrist-led reform, although potentially important in developing a supporting context for policy and planning, by itself usually does not come to grips with basic issues of how learning takes place; and
- (2) reform exclusively defined at the national level may successfully demand compliance but often fails to gain commitment from administrators and teachers, let alone students and parents. Under such reforms lower echelon administrators and teachers may be asked to follow without question the educational and political agendas and interpretations of a few policy makers, fostering further deskilling of teachers and what has been called a “culture of dependence.”

The following assumptions characterize the newer approach to initiating and sustaining educational change:

- (1) lasting improvement in educational quality requires knowledge and insights of those professionals closest to the processes of teaching and learning, i.e., teachers, headteachers, local supervisors;
- (2) local level personnel and institutions by themselves often lack fiscal and technical resources to effect continuing change;
- (3) sustained improvement in educational quality requires involvement of actors from different levels of the system; and
- (4) parental and community involvement are necessary in both the planning and implementation of successful educational change.

Traditional planning of educational change has tended to ignore uncertainties and complexities and focus instead on simplifying and standardizing innovations for quick dissemination. The newer approach draws from the extensive local and regional experiences of many countries in initiating and implementing school and classroom level innovations.¹⁷ Successful educational change recognizes the complexity of developing viable change and gives less attention to rigid plans or outcomes. Such planned change is assumed to “begin with a few readiness principles” (e.g., adequate resources, acceptance of validity of the new practice), require “pressure” (from below), “support” (from above), and “continuous negotiation” (between system levels). Specific, detailed, centralized plans are devalued as initial guides to new practice because “plans follow culture” and “mission follows (rather than precedes) enactment of principles.”¹⁸

The typical approach to planned change defines the role of the center as initiator of policies and actions and the role of the local authorities and schools as implementers which participate, at some level, in the process. IEQ is indeed working in the context of nationally initiated educational reforms. However, it is involved not only in a bottom-up participation but also in bottom-up initiatives. Within the school context of scarce resources and unsatisfactory quality, IEQ is exploring what works at the classroom level and bringing those insights into the change process. However, by linking the research and feedback processes to decision processes of the national educational system, and engaging the educational bureaucracy in critiquing the IEQ experience, the central authorities, i.e., ministries of education, become participators. Thus research\feedback linkages occur at various levels and research both informs, and is informed by, both policy making and practice.

Evolution of the IEQ Project

The IEQ project seeks to contribute directly to improving educational quality in a sample of countries already engaged in educational reform. In accomplishing this objective the project is expected to add to the international research-based knowledge on improving educational quality at the classroom and school levels. The word "improving" is significant and has been interpreted to mean that research related to educational quality should become part of a dialogue between researchers, practitioners, stakeholders and policy makers that eventuates in changes in policy and practice. That is, IEQ has an obligation, at minimum, to demonstrate a process whereby classroom research becomes integral to the process of initiating and sustaining educational improvement.

IEQ, through quantitative and qualitative classroom research, seeks to blend an action-research cycle with national educational planning efforts. The research-practice cycle involves, in varying degrees, highly trained host country and U.S. researchers, classroom teachers and administrators in observing, studying, reflecting, enacting change, monitoring effects, modifying and assimilating change, etc. By informing and involving a range of educational officials, stakeholders, and organizations, the research-dialogue-policy-practice cycles in a sample of schools and the broader country planning and reform cycles intertwine.

Major Activities

During the first three years of the IEQ project, there have been both commonalities and differences in its implementation across the core countries. For example, in all participating countries, research focused on classrooms, children, and teachers is the heart of the IEQ project. Table 1 summarizes the evolution of major activities of IEQ in each of the three core countries. This presentation, because of its brevity, can hardly begin to describe the many activities taking place or capture the range of the professional and personal problems and successes which arose as the project evolved. Boxes A, B, and C add detail on the context and implementation of the project.

Table 1
ILLUSTRATIVE SUMMARY OF IEQ PROJECT

Country	Country Reform	Classroom Research and Intervention	Integrating New Knowledge Into Educational System	Cross-National Networking	Problems/Issues
Ghana	Primary Reform Education Program (PREP) Supported by Government of Ghana and USAID.	<u>Phase I</u> (- Dec '93) - Studies of availability, source and use of instructional materials in sample, primary schools. <u>Phase II</u> (In Progress) - Use and assessment of new methods and materials in teaching oral and written language. <u>Phase III</u> (Planned) - Expansion of cycle of research - intervention - practice.	<u>Phase I</u> - Meetings of research team, head teachers, teachers and circuit supervisors. Communication schedule with national bodies and international donors. Country conference on primary education. <u>Phase II</u> - Continue liaisons with all levels of system and country conference on primary education. <u>Phase III</u> - Extension of cycle of education improvement by Ghanaian educators.	Research coordinators participate in workshops in Swaziland. IEQ presentation at conference of Comparative and International Education Society (CIES), San Diego, March 1993.	Extent to which research team should be involved in design and implementation of strategies for improvement. Technical difficulty of communication between U.S. team and HICRT. Timing of the phasing-in of complete country ownership of project.
Guatemala	Basic Education Strengthening (BEST) Project, funded by Government of Guatemala and USAID. Nueva Escuela Unitaria (sub-project of BEST) a multigrade classroom initiative developed on a regional basis.	<u>Phase I</u> - Study and Compare 1st and 2nd graders in NEU and traditional multigrade schools. Provide feedback in NEU end of year meetings with supervisors, teachers, and parents. <u>Phase II</u> - Study and compare same children in their second year in the active learning multigrade program. Organize workshops for teachers or supervisors. <u>Phase III</u> - Study expansion of NEU to additional schools. Feedback, policy and practice discussions with teachers, administrators, system officials.	<u>Phase I</u> - Seminar of NEU teachers, parents and students in each region. <u>Phase II</u> - Regional workshops with teachers and supervisors. Communication with Minister of Education. <u>Phase III</u> - Teacher workshops in local settings, national conference.	Presentations at CIES Annual Conference, March 1993. Regional Conference on NEU findings. Presentation at National Conference on Rural Education in Guatemala.	In May 1993 political problems paralyzed the whole country, making data collection impossible.
Mali	Basic Education Expansion Project (BEEP) Supported by Government of Mali and USAID	<u>Phase I</u> - Studies of teaching methods and pupil behavior in sample primary schools. <u>Phase II</u> - Analysis of findings from Phase I. Development of quality improvement interventions. <u>Phase III</u> - Further develop and implement pedagogical and extra curricular strategies for improved learning of French languages.	<u>Phase I</u> - 1st National IEQ Seminar to discuss findings and a pilot intervention. <u>Phase II</u> - 2nd National IEQ Seminars.	Presentations at CIES annual conference. March 1993.	Selecting institutions to coordinate IEQ activities. Coordination between the two chosen collaborating institutions. Tenuous links between classroom observations and choice of intervention.

ILLUSTRATIVE DESCRIPTIONS OF CLASSROOMS

Guatemala (Comparison of traditional and NEU classrooms)

In the traditional Guatemalan multigrade classrooms, children of all grade levels spend the day seated at their desks, copying written assignments in their notebooks, and are expected to work alone, consulting the teacher only to have their work corrected and to receive new copying assignments. When a child goes to the board, he/she is expected to recite from memory or to read what they have copied in their notebooks. The other students either continue copying or engage in no apparent learning activities. Children in this environment show little interest in the repetitious tasks they have been assigned and participation in these activities was not correlated with achievement. In contrast, multigrade classrooms of the *Nueva Escuelas Unitaria* (NEU) utilize peer teaching, self-instructional guides and small group instruction from teachers. Young children are engaged in generating words (*palabras generadores*) which are expressions that children have identified as important to them, by writing in the air, in a sand box, or on each other's backs. Older children work in small groups with self-instructional guides, visit learning corners, or participate in teacher-led activities, where they are provided with immediate feedback on their performance. (*Quality Link*, #2, Fall 1993)

Mali (French language instruction in primary grades)

Children come to school with limited or no proficiency in French. Language use in the class is restricted to the lines of the dialogue (found in the textbook), students are drilled and made to repeat sentences for these dialogues, and frequently it is questionable whether or not students actually comprehend the utterances they are made to say. The reading lessons observed consisted of the teacher calling on students to come to the board and read three syllables, three isolated words, and three disconnected sentences. Simply stated, children hear in effect very little French in the classroom and the French they are exposed to is repetitive and often uninteresting. (*Trip Report # 20* by Rick Donato and Josh Mushkin)

Ghana (Classroom conditions and learning difficulties)

The typical Ghanaian primary school classroom has bare walls, tables and chairs in disrepair, and teaching materials limited to a chalkboard and textbooks. The classroom is teacher-centered and students are expected to respond but not ask questions. Common learning difficulties, particularly in English language instruction, revealed by classroom observation and performance assessments are in the areas of listening comprehension, oral and written expression, and reading, both decoding and comprehension. This performance pattern seems to reflect an emphasis on copying and choral repetition as opposed to comprehension and open-ended oral or written expression. (*Quality Link #3*, Summer, 1994)

In order to integrate IEQ efforts with other innovations in educational quality which are part of national reform efforts supported by the governments and international donors, the research focus was narrowed in Ghana and Mali to give central attention to language learning, particularly to conditions affecting oral and reading comprehension, in selected primary grades. In Guatemala, classroom research focused on the identification of those classroom factors and conditions influencing language and mathematics achievement and growth in the socio-emotional development of pupils. Members of the U.S. research support teams, in their limited but important role, assisted in research design, development of instrumentation and data analysis. To yield a measure of value added by modified classroom practices, the country research team will, at minimum, assess pupil performance and other effects on pupils at two points in time subsequent to interventions.

BOX B

ILLUSTRATIVE IEQ RESEARCH

Ghana

The overall purpose of Phase I (See Table 1) was to gain: clearer understanding of the primary school environment (e.g., availability and use of instructional materials, teacher-pupil discourse and pupil-pupil interchanges); exposure of local research teams to primary schools; familiarity of local researchers with qualitative methods; and to generate findings that would guide future research. Phase II focuses on the use of materials and oral and written language proficiency across the curriculum in fourteen schools. Contextual dimensions will be examined, and the feedback into the education system will be formalized. Initial Phase II research activities have focused on profiles of the English reading, writing, and oral language proficiency levels of children in grades 2-5. Phase III, scheduled for 1994-1995 will focus on school and classroom changes and strengthen the feedback loop at the regional, school and classroom levels. (*Quality Link #1*, Fall 1993; #2, Spring 1994).

Guatemala

In Phase I, which corresponded to the first full year of the NEU program, IEQ studied a 10% sample of first and second grade NEU children and a similar group of comparison children. These children, who represented both indigenous and non-indigenous or *ladino* children, were tested on reading, mathematics, creativity and self-concept and their nutritional status was measured. In addition a sub-sample of children were observed intensively during the school year and parents and teachers were surveyed regarding their satisfaction with the program. Phase II focuses on examining the experience of the same children during the second year of NEU implementation and developing workshops with teachers and supervisors to review IEQ findings and develop plans for refining the NEU program. Phase III will examine a larger sample of schools during the expansion of the NEU program. (*Trip Report #18* by Ray Chesterfield)

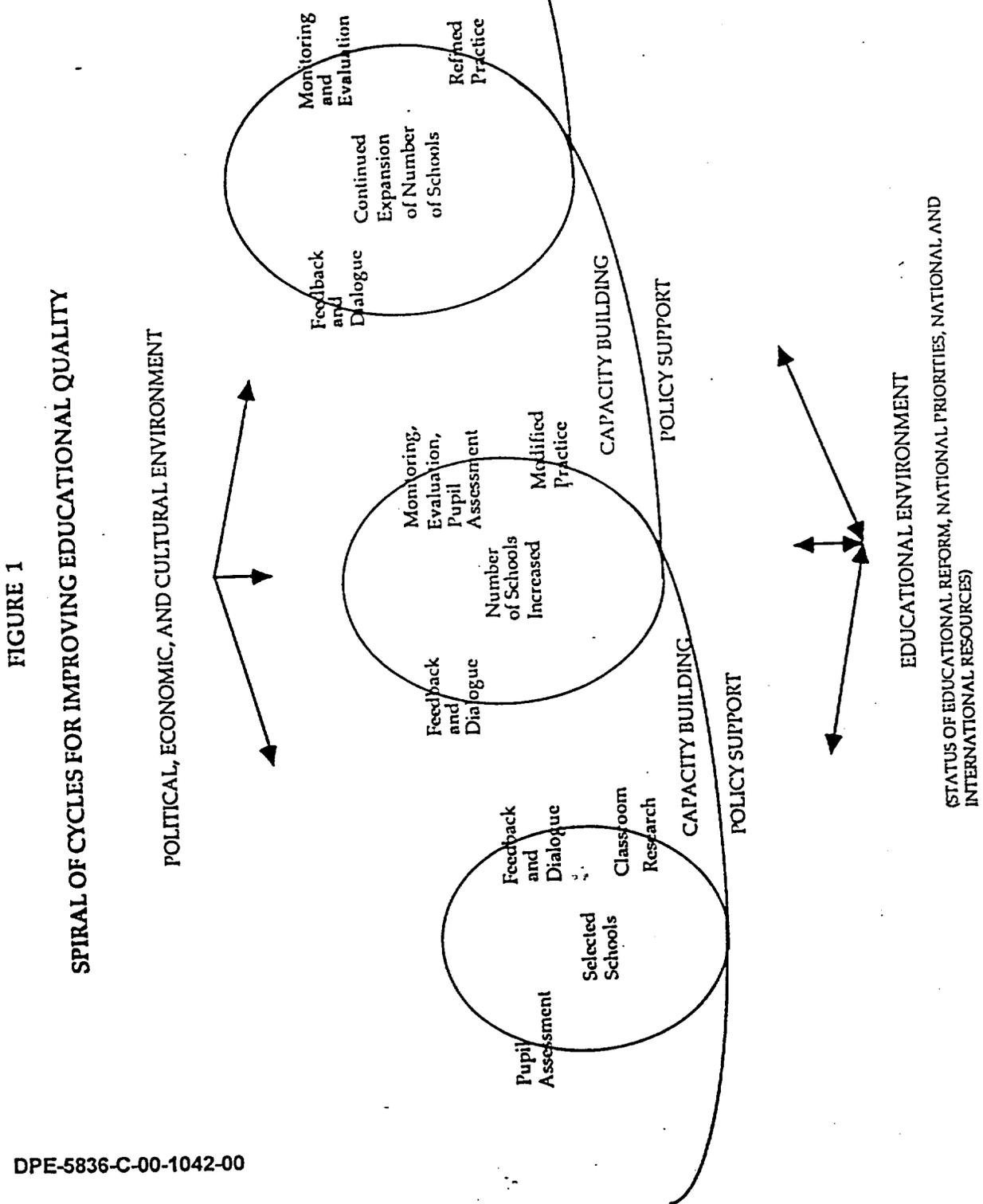
Mali

During Phase I, the Institut Pedagogique National (IPN) and the Institut Supérieur de Formation et de Recherche Appliquée (ISFRA) conducted field research on the child's home environment and the learning process in the first two years of primary education. IPN's task was to study classroom practices as they affect reading and language learning in grades one and two. Phase II research, to be initiated in early 1995, will be divided into two components: language achievement and classroom culture. The language achievement research will compare baseline data on the language abilities of pilot school students with performance on these measures at the mid-point and the end of Phase II. Research on classroom culture will aim to document and analyze the context of instruction, how this context changes and improves over time, and how it compares to the classrooms studies during Phase I and to other non-intervention classes. (*Quality Link*, #3 summer 1994)

In Ghana and Mali discussions of the results of classroom research extended not only to teachers and local administrators but also to representatives of parents' groups and to higher-echelon administrators. The role of the U. S. research support team was to offer additional professional voices to such dialogue. In Guatemala, by contrast, the intervention was, in effect, a given; that is, the national government asked IEQ to evaluate the process of implementation and the impact of the NEU on pupil performance when compared to traditional multigrade schools not implementing the NEU program.

Cycles of Quality Improvement

Figure 1 serves to complement Table 1 by adding further conceptualization and description to the planning and development of the project. Figure 1 represents a spiraling sequence of flexible, interactive planning and decision processes, the nature of which can not be precisely determined in advance. A summary of the roles played and the information exchanged clarifies this evolving process of educational improvement.



After the negotiation of the country contract, the choice of country research teams, definition of U. S. backstopping technical support, and the research parameters were roughly defined. The country research teams provide leadership in the design, initiation of classroom observation and research, and in the evaluation of the modified practices. The teams give ongoing face-to-face and written feedback to teachers throughout the research and practice cycles and, along with a range of other educators, participate in the design or modification of interventions. Additionally, the teams, through government channels, interact with educational officials from the local level to the ministries of education and with relevant international and bilateral organizations.

Teachers and headteachers, although not deeply involved in the initial research phase, in collaboration with district supervisors participate in the design of the refined classroom practices and have the basic responsibility for carrying out the chosen changes in practice. Teachers and headteachers have ongoing face-to-face interaction with supervisors as they exchange information, assess progress and share problems. The research teams, particularly in Guatemala, involve parents in the research and, in all countries, encourage the involvement of parents or community representatives in discussions and plans to improve educational quality.

Program developers, and local or district supervisors participate in the definition and development of modifications in practice, and provide resources and technical assistance for staff development. The supervisors receive information on research design and results from the research team and schools, communicate to teachers through writing and through face-to-face meetings, and develop plans and schedules for training seminars and workshops on new classroom practices. Regional education officials review the progress of the research and interventions and participate in organizing staff development, acquiring needed resources and in disseminating information to higher echelons of officials on the results of modifications in practice. Regional and local officials have a further responsibility for coordinating research and practice initiated by IEQ with national reform efforts. The national level officials from the ministries of education and other related ministries receive periodic reports and action plans from local and regional officials, and provide resources and oversight on dissemination and implementation of innovations into the larger system. In addition, ministerial officials communicate policies and advice to lower echelons, and provide periodic face-to-face communication with groups of teachers and researchers. And, when appropriate and resources are available, ministries of education sponsor regional and national conferences or "colloqs," focussed on comprehensive reform of basic education or on a particular issue, e.g., language instruction, bringing a range of national and local educators, including participants in the IEQ project, together in dialogue.

Because of the traditional separation between researchers and research consumers and between practitioners and decision makers, developing and maintaining dialogue is a serious challenge facing the IEQ project. The demand by some teachers for research-based knowledge is not strong, and communication across layers of educational officials may fluctuate as priorities and personalities change in the higher echelons of the educational bureaucracy. The IEQ experience in each country points to the challenge and the amount of effort necessary to create satisfactory interchanges of researchers, practitioners and policy makers.

BOX C

EXAMPLES OF LINKING RESEARCH TO CLASSROOM PRACTICE

Ghana

In Ghana, the process of choosing new or modified classroom practices is facilitated by a series of local and national seminars held for teachers and circuit supervisors and other educational officials. Classroom research findings are reviewed by the research team and elaborated by observation of teachers. The implications and feasibility of potential modifications of practice are discussed. After consensus is reached, a schedule is set for the introduction of new practices. Three major strategies selected for improving English learning are: (1) constant practice in oral English; (2) constant exposure to print; and, (3) teaching to make every pupil a successful learner. (*Quality Link #3*, Summer 1994)

Guatemala

In Guatemala research findings were discussed with teachers, parents and students as part of the NEU program's workshops reviewing the results of the first year of implementation in each region. As data continued to be analyzed and discussed by IEQ researchers and NEU program developers, it became apparent that the richness of the data on classroom interaction could be useful for discussions with practitioners. Thus, the IEQ team and NEU developers worked together to develop a series of one-day workshops for supervisors and teachers which used classroom examples to encourage reflection about gender differences, socio-emotional development of children and decentralization of learning contexts. Additionally, frequent communication was maintained with the Minister of Education and ministry personnel. The minister formally requested IEQ to provide training in case study methodology and qualitative research methods to designated ministry officials. (*Trip Reports #15, #18, #21* by Ray Chesterfield)

Mali

Initial classroom and school research in selected primary schools identified several problems related to language instruction and curriculum. Research on the school children uncovered health and nutritional problems affecting school attendance and likely to directly affect learning ability. The research team cooperated in planning and facilitating a national seminar on French language learning in Grades 1 and 2, attended by 80 local, regional, central and international educators and decision-makers. A second seminar for teachers gathered 71 teachers, principals, pedagogic advisors, inspectors and regional directors to discuss the Phase II pedagogical strategies: the pedagogy of folktales and legends, that of "small groups," the strategic use of maternal languages, the creation and use of didactic materials, and the introduction of community study centers. These strategies will be introduced in selected schools for further evaluation. (*Trip Reports #20, #26* by Rick Donato and Josh Mushkin; *Quality Link #3*, Summer 1994)

The classroom research process and results are centrally important to the project. Such research examines the effects of a range of organizational and institutional configurations on pupils with different characteristics. The style of IEQ research produces large amounts of data on individual students, classrooms and schools, thus presenting opportunities for a number of comparative studies. Cross-country comparative research is underway or being planned in a number of areas including: instructional strategies, classroom discourse analysis, health and nutrition, and on the formal and informal processes through which research, practice and policy are linked.

As IEQ evolves, external research, training and other technical support is expected to remain significant to the project's continued success. However, further project development also implies increasing self-reliance on local teachers, headteachers, and supervisors in conducting analyses, evaluations and in making appropriate adaptations to ongoing interventions. The teacher, through research, observation, analysis, and reflection, becomes a key actor in defining the problem, assessing what needs to be done and determining what is feasible in a given context. The long-term goal at the classroom level is a blurring of distinction between instruction and assessment. However, an understanding of the decision process of linking research to practice is necessary to interpret how the interventions are linked to outcomes.

Four principles underly the IEQ Project. IEQ is designed to define and improve educational quality by: forming partnerships between teachers, researchers and other stakeholders; focusing research on school and classroom performance and experience; connecting research to reform priorities in each country; and measuring the value of research by its utility in achieving specified quality objectives.¹⁹ These principles become operationalized in a spiral of cycles of planning and actions. Over time (see Figure 1) the cyclical process continues but with new, substantive foci. Thus, the IEQ model is based on the assumption that sustaining a process of improving the quality of education in classrooms and schools depends directly on the ability to develop ongoing partnerships of researchers, policy makers and practitioners who are committed to generate, understand and utilize accurate quantitative and qualitative information in their efforts to improve pupil performance by changing organizational and environmental conditions, developing capacity of educators and transforming classroom practices.

The classroom research undertaken by the IEQ team in each country can, in a sense, stand alone and already is beginning to generate new insights into the importance of decentralizing instruction in rural schools, the development and use of language materials in basic education, and the development of new instruments for the evaluation of such materials. However, refinements in practice and shifts in interventions are expected to continually emerge. For example, in Ghana the application of curriculum-based assessment is expected to provide individualized assessments which allow placing each child on a continua of levels of reading, writing and numeracy performance. This information will help to define appropriate instruction and instructional materials. Curriculum-based assessment thus may be viewed as an integral part of the process of monitoring pupil progress, the basis for continued or modified practice, and the stimulus for new classroom research and analysis.²⁰ By way of additional example, although language fluency and simple mathematical skills are likely to persist in utility, more attention in the future may be given to higher order skills and advanced problem solving. And, as conditions in the external political economy and cultural environment change, new issues of equity and relevancy may impact on the meaning and indicators of quality, requiring new policies and new classroom practices. The legacy of IEQ, then, is expected to include not only results and impacts of research but also new motivations, capabilities and experience of educators in developing an action-oriented, interactive planning process fed by classroom and school information but involving actors at different levels of the educational system. As more effective ways of relating research, practice and policy are developed, this cyclical process should mature and increasingly become self-sustaining.

SUMMARY

Fiscal constraints, the failure of rapidly expanding educational enrollments to achieve national economic aspirations, the crisis in many countries over unemployed school leavers, and the stark reality that little meaningful learning takes place in many schools may combine to make the 1990s a decade of struggle

by developing countries to focus on educational quality. Concurrently, a more realistic approach to effecting educational change that relies less exclusively on massive, centrally-planned efforts and gives more attention to center-local partnerships involving researchers, policy makers and practitioners provides a new context for ongoing improvement in educational quality at the classroom and school levels.

The pioneering research on the effects of schooling distinguished the comparative strength of a broad range of factors on influencing student achievement. The research on effective schools helped refocus attention on characteristics of schooling and the central roles of teachers and administrators. Both bodies of research attempted, without full success, to be prescriptive and offer meliorative policies and strategies. However, if evaluated for their potential for generating hypotheses and identifying innovations to be monitored and assessed, these studies were highly successful. Findings of such studies provided starting points for IEQ in choosing what to observe in classrooms, what data to seek at the school level, and how to assess pupil performance. Additionally, international research on educational quality provided the broader context within which IEQ country and cross-country research findings and experiences could be examined, compared, and contrasted.

The IEQ project, in the three countries supported under its core contract, is an attempt to demonstrate a research-based, classroom-focused, participatory process of initiating and sustaining new or refined instructional and learning approaches which, at minimum, result in improved pupil performance. Having completed two operational years, IEQ has begun to generate valuable insights and products on the characteristics of classrooms in Ghana, Guatemala, and Mali, on their potential for change, and on the organization, technology, resources, and capacity-building necessary for continuing educational improvement. The challenge of the future is to continue and deepen in each country, without necessarily imposing a unified model of the process, the spiral of collaborative cycles of research, analysis, policy, planning, and practice integral to improving educational quality.

A number of difficulties have been encountered in implementation of IEQ. The problems related to communication and coordination are as significant as those typically found in multi-country projects supported by USAID and other bi-lateral and international agencies. The design of the project requires researchers to understand the sometimes complex and ambiguous relationships between research, policy and practice, and to inform and interact effectively with decision makers at all levels of the system. Successes in this regard have been identified earlier (see endnote 16); however, changes in educational personnel and national priorities mean that there is a continued struggle within the IEQ project to establish new relationships and partnerships within the educational systems.

The practical success of IEQ has been demonstrated in the increased capabilities of host-country researchers, development of research instrumentation, generation of useful classroom and pupil knowledge, and evolvment of collaborative relationships in pursuit of improved pupil learning at the school level. Practitioners in the field, researchers, supervisors and educational officials, are responding favorably to the concept and on-site experiences of IEQ. Enough evidence has been acquired to lend credibility to the basic IEQ model. In addition to its practical impact, which is expected to increase as the project continues, IEQ presents a remarkable opportunity for adding to international research knowledge through a number of cross-country comparative studies. By way of example, the possibility of a multi-year, longitudinal, three-country comparative study of the spiral of cycles of research, practice and planned system change could make an enormous and unique contribution to the extant methodological, theoretical and policy knowledge of educational change.

ENDNOTES AND REFERENCES

1. The Improving Educational Quality (IEQ) is a five-year project centrally funded by USAID. The prime contractor is the Institute for International Research (IIR). Juarez and Associates, Inc. and the University of Pittsburgh are subcontractors. For further information about the IEQ project contact Mr. Frank Method, R&D, USAID, SA-18, Washington, DC; or Dr. Jane Schubert, IEQ Project Director, IIR, 1815 N. Fort Myer Drive, Arlington, VA 22209.
2. In many ways this paper is built on an earlier paper prepared for IEQ by Patricia B. Campbell (Campbell-Kibler Associates, Groton Ridge Heights, Groton, MA). "Improving Educational Quality: A Philosophy, A Process, A Product." The authors also wish to thank Martha Mantilla and Tom Clayton of the University of Pittsburgh for their suggestions. A variety of IEQ documents and individuals have provided information in the preparation of the paper. In particular, the authors draw from IEQ reports prepared by: Ray Chesterfield, Abi Harris, Yetilu de Baessa, Aida Passigna, Rick Donato, Josh Mushkin, Jane Schubert, Beatrice Okyere, and Urbain Dembele. Written critiques of the paper were provided by Henry Akplu, Ray Chesterfield and Jane Schubert.
3. Fuller notes that "New ways of thinking about the quality and social character of schooling are emerging. Much of this work emphasizes how the membership and rules of participation are organized for pupils and teachers within the school or classroom" (p. 4871). See Fuller, B. "Quality of Education in Developing Nations: Policies for Improving" *The International Encyclopedia of Education*. Second Edition. Pergamon, 1994. Also see: Fuller, B. "Raising School Quality in Developing Countries: What Investments Boost Learning." *Review of Educational Research*, 57, 1987; Heyneman, S. & Loxley, W. "The Effects of Primary School Quality on Academic Achievement Across Twenty-nine High and Low Income Countries." *American Journal of Sociology*, 88(6), 1983; Hallak, J. "Investing in the Future: Setting Educational Priorities in the Developing World." Paris: UNESCO/IIEP and Oxford: Pergamon, 1990; Ross, K. N. & Mahlck, L. (Eds.), "Planning the Quality of Education." Paris: UNESCO/IIEP and Oxford: Pergamon Press, 1990. For a broader treatment of the topic see: Chapman, D. W. & Carrier, C. A. (Eds.), "Improving Educational Quality." New York: Greenwood, 1990. The distinctiveness of IEQ research lies in its attention to instruction and learning, and the vision of research as integral to a broad educational planning and reform process.
4. One description of a center-local partnership can be found in Adams' "COPLANER: An exploratory model for decentralizing educational planning in Indonesia." Jakarta: MOEC, 1994. Also see: Special Issue on Education, "(De) Centralization and Democratic Wish." *The Forum*, 2(3), 1993; Bray, M. with Lillis, K. (Eds.), *Community Financing of Education: Issues and Policy Implications in Less Developed Countries*. Oxford: Pergamon, 1988; Tyack, D. "School Governance in the United States: Historical Puzzles and Anomalies," in J. Hannaway & M. Carnoy (Eds.), *Decentralization and School Improvement*. San Francisco: Jossey-Bass, 1993; Cummings, W. "Decentralization, Privatization, Community Participation Issue Paper." Prepared for USAID/IEES, Indonesia Project, Belmont, MA, 1992 (mimeo); Moyle, C. and Pongtularan, A. "Involving the Community in the Local School." *Institutional Management: School Decision-making in the Asia/Pacific Region*. Paris: UNESCO, 1992.

5. Insightful discussions of the need for relevant information at the school and classroom levels are found in: Chapman, D. & Mahlck, L. "Linking Data to Action" in D. Chapman & L Mahlck (Eds.), *From Data to Action: Information Systems in Educational Planning*. UNESCO/IIEP and Oxford: Pergamon, 1993; Chapman, D. and Mahlck, L. *Information for Improving School Practices*. UNESCO/IIEP, 1995 (Forthcoming). The importance of focusing at the school and classroom levels has also been supported by the growing recognition of the value of qualitative research in acquiring intimate insights into the dynamics of teaching within the organization and culture of schooling.

6. One description of planning is a "social learning" model. See: Friedman, J. "Planning as Social Learning" in D. C. Korten & R. Klaus (Eds.), *People Centered Development*. West Hartford, CT: Kumarian Press, 1984; Adams, D. "Extending the Educational Planning Discourse: Conceptual and Paradigmatic Exploration." *Comparative Education Review*, 32(4), 1988. Other authors emphasize planning as implementation or simply as organized change. See: Crandall, D. et al. "Model of the School Improvement Process: Factors Contributing to Success." *A Study of Dissemination Efforts Supporting School Improvement*. Andover, MA: The Network, 1982; Berman, P. "Educational Change: An Implementation Paradigm." in R. Lehming & M. Kane (Eds.), *Improving Schools*. Beverly Hills, CA: Sage, 1981; Velzen, W. Miles, M. B. Ekholm, M. Hameyer, U. & Robin, D. *Making School Improvement Work: A Conceptual Guide to Practice*. Leuven, Belgium: OECD/ACCO, 1985; Loucks-Horsley, S. & Crandall, D. *Analyzing School Improvement*. Leuven, Belgium: OECD/ACCO, 1986.

7. We use the term "action research" for the sake of convenience and do not subscribe to all of the activities which sometimes fall under this label. We are referring to quantitative or qualitative research which is participatory ("it is research through which people work toward the improvement of their own practices"), collaborative ("it involves those responsible for action in improving it, widening the collaborating group. . . to as many as possible." Kemmis (author of the quotations above) writes of a "spiral of cycles" which "aim at the improvement of practices, understandings, and situations, and at the involvement of as many as possible of those intimately affected by the action in all phases of the research process." For a useful brief review of the meaning of action research see Kemmis, S. "Action Research" in T. Husen & T. N. Postlethwaite (Eds.), *The International Encyclopedia of Education*, Second Edition, 1: 42-48, 1994. Also see: Carr, W. and Kemmis, S. *Becoming Critical: Education, Knowledge and Action Research*. London: Falmer Press, 1986; Cascante, F. "Los Ambitos de la Practica Educativa: Una Experiencia de Investigacion en la Accion." *Revista Interuniversitaria de Formacion el Profesorado*, 10: 265-74, 1991; Corey, S. "Action Research, Fundamental Research and Educational Practices." *Teachers College Record*, 50: 509-14, 1949; Lewin, K. "Action Research and Minority Problems." *Journal of Social Issues*, 2(4): 4-46, 1946.

8. The formal statement of the broad objectives of IEQ is as follows. "The IEQ Project strives to: (1) Understand how and why each country's classroom-based interventions influence pupil performance; (2) Establish a sustainable process whereby research on improving educational quality is transferred into practice throughout the educational system; (3) Create opportunities for dialogue and partnerships among researchers and educators who are seeking to improve educational quality at local, regional, national, and international levels; (4) Maintain an ongoing history of the project to document the rationales for choices made, opportunities and constraints encountered, and lessons learned."

9. See, for example, Heyneman, S. and White, D. S. (Eds.), *The Quality of Education and Economic Development*. Washington DC: The World Bank, 1986. Also see Hanushek, E. A. "Education Production Functions." In T. Husen & T. N. Postlethwaite (Eds.). *International Encyclopedia of Education, Second Edition*, 3: 1756-1762, 1994.
10. Riddell, among others, criticizes the single-level regression models for not having been able to weed out the confounding influences of selection bias. See Riddell, A. R. "An Alternative Approach to the Study of School Effectiveness in the Third World." *Comparative Education Review*. 33(4), 1989.
11. Schiefelbein, E. and McGinn, N. "Toward an Integration of Educational Research and Planning." *Bulletin of Major Projects of Education in Latin America and the Caribbean*. (28) Santiago, Chile: UNESCO/OREALC, 1992.
12. In an analysis of the research literature in developing countries and the U.S., Moulton observes that different teachers make different use of textbooks, and little is yet known as to why teachers use textbooks the way they do. Moulton, J. "How Do Teachers Use Textbooks and Other Print Materials?: A Review of the Literature." IEQ Project, IIR, 1815 North Fort Myer Drive, Arlington, VA 22209. (Draft, 1994).
13. For example, members of the Host Country Research Teams from Ghana, Guatemala and Mali presented their research findings on the IEQ Project in their respective countries at a number of national conferences and at the 1994 Annual Meeting of the Comparative and International Education Society in San Diego, California.
14. A number of authors have attempted to identify major characteristics of effective schools. See: Edmonds, R. R. "Effective Schools for the Urban Poor." *Educational Leadership*. 37(1): 20-24, 1979; Lezotte, L. "School Improvement Based on the Effective Schools Research." *International Journal of Educational Research*. 13(7): 815-25, 1989. From the 1970s through the 1980s, researchers in the United Kingdom identified the effective schools at elementary and secondary levels. Six factors were described as the features of effective secondary schools and twelve characteristics were recognized in effective elementary schools. See: Rutter, M. et al. *Fifteen Thousand Hours*. Cambridge, MA: Harvard University Press, 1979; Mortimer, P. et al. *School Matters*. England: Open Books Publishing Ltd., 1988. Additional references on effective schools include: Bashi, J. and Sass, Z. (Eds.), *School Effectiveness and Improvement: Proceedings of the Third International Congress for School Effectiveness*. Jerusalem: Magnes Press, The Hebrew University, 1992; Scheerens, J. Vermeulen, C. J. & Pelgrum, W. J. "Generalisability of Instructional and School Effectiveness Indicators Across Nations." *International Journal of Educational Research*, 13(7): 789-99, 1989; Williams, J. D. and Jacobson, S. *Monitoring School Performance: A Guide for Educators*. Lewes: Falmer Press, 1992.
15. Quality has many definitions. Any definition of quality may be subject to criticism and possible rejection by those who have different expectations or understandings of the purposes and capabilities of educational institutions. See Adams, D. "Defining Educational Quality" published by IEQ and subsequently in *Educational Planning*, 9(3): 3-18, 1993.

16. See Yetilu de Baessa. "Report on Workshops for Supervisors and Teachers." IEQ Guatemala, 1994. This report describes the open and frank discussions of the Guatemalan research team with teachers and supervisors about the research findings related to traditional classrooms and those of the Nueva Escuela Unitaria. One of the several important conclusions from four workshops was: "Reflection over information on actual interactions in the classroom can lead teachers to develop action steps for refining an educational reform."
17. For a thorough review and interpretation of the literature on educational "demonstration projects," a major component of the larger body of literature on educational innovation and change, see Buckley, J. and Schubert, J. "Demonstration Programs and Educational Innovation: A Review and Synthesis of the Literature." American Institute for Research, 1983.
18. Quotations are from Fullan, M. *Change Forces: Probing the Depths of Educational Reform*. London: Falmer Press, 1993. Also see: Adams, D. Sylvester, J. & Wang, Y. "Translating Research Findings into Practice: Initiating and Sustaining Improvements in Educational Quality." (unpublished paper for the IEQ Project, University of Pittsburgh), 1993; Dalin, P. & Rolff, H. *Changing the School Culture*. Oslo, Norway: International Management for Training in Educational Change, 1992. Elmore, R. *Restructuring Schools*. San Francisco: Jossey-Bass, 1990. McLaughlin, M. "The Rand Change Agent Study Revisited." *Educational Researcher*, 5: 11-16, 1990.
19. See Schubert, J, "Classroom Profiles as a Stimulus for Improved Policy and Practice." Paper prepared for Consultative Meeting, Association for Educational Assessment in Africa, Dec 5-8, 1994, Mombasa, Kenya. This paper also provides further detail on the kinds of information collected by IEQ teams, with implications for pupil performance in Ghana.
20. For a succinct and relevant analysis of the meaning, applications, and potential of curriculum-based assessment see Harris, A. & Paigna, A. "Curriculum-Based Assessment: Linking Curriculum, Assessment, and Learning in Developing Educational Systems." IEQ Project, IIR, 1815 North Fort Myer Drive, Arlington, VA, 22209, 1994. (Draft).