

*Improving Education Quality (IEQ)*

*Educational Quality Framework*

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## ABSTRACT

This paper combines the experiences of host country colleagues and U.S. education researchers to examine educational quality and the process of change. During the five years of the Improving Educational Quality (IEQ) I Project, education researchers worked collaboratively to examine issues related to quality in Ghana, Guatemala, Mali, South Africa, and Uganda. The principles which emerged from IEQ I formed the foundation for the current IEQ II Project in an expanded set of countries. The paper is intended to stimulate thinking and dialogue about what constitutes educational quality in particular contexts and how change can be facilitated. We propose means to engage a variety of stakeholders in a learning process that is grounded in information, that engages groups of people in individual and joint reflection, and that leads to specific action to improve quality.

One of the reasons the IEQ Project achieved such a high level of success is the pivotal role that Ministries of Education and host country educators played. They were instrumental in identifying what was examined in their classrooms and used the information to change educational practices. The continual assessment of what happened at the classroom level eventually led to an understanding of what policies were needed to improve and support teaching and learning.

IEQ host country collaborators, whose work and findings were invaluable in writing this piece, include:

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## INTRODUCTION

Educational quality has become the central pivot for many education systems in developing countries. Critical to this discussion is the definition of quality, which is the theme of a series of papers by the Improving Education Quality (IEQ) II. Project. The papers build on experiences acquired over five years of implementing the earlier IEQ I Project. In addition, the papers explore what is being learned about educational quality in other projects and research and integrate these findings to form a more complete understanding of the subject. IEQ has defined quality as it is embedded in context but in discreet terms so that it can be acted upon.

The objective of this paper is to identify how to measure quality in teaching and learning and determine what steps must be taken to improve educational quality. Host country counterparts, from the partner institutions in five countries (Ghana, Guatemala, Mali, South Africa and Uganda), highlight their experiences in IEQ I. Their insights show what was learned about the process of determining educational quality, and what strategies were effective in improving the quality of teaching and learning.

The key issues addressed here are:

- How to evaluate what is happening in classrooms with respect to the quality of teaching and learning;
- How to reach consensus on approaches to improve the quality of teaching and learning; and
- How to translate what is being learned about the quality of teaching and learning in classrooms into effective policies and practices.

Underlying this discussion is the acknowledgement that that all children have the right to a quality education and are capable of learning to the highest standards. The overview draws extensively from other sources about educational quality. Although much of the research is based on experiences in developed countries, the literature cited underscores key practices essential to improving quality elsewhere.

Although reforms and improvements to educational quality must take place at all levels, not all stakeholders will be involved at the same time. For instance, discussions on how to measure educational quality might focus on evaluation procedures and methodology at the central ministry level. However, sharing findings and mobilizing efforts to discuss educational quality should occur at the school and community level. Consequently, some discussion may draw more heavily from what was learned at the central ministry level, whereas other discussion may be framed around what took place in classrooms or communities, depending on the country context and priority level of interest.

Note that what is being learned in IEQ is ongoing. Certain aspects of learning about improving educational quality are still embryonic. One area where much remains to be

examined is how to sustain effective participation of all the stakeholders and encourage school-based management to improve educational quality. Another area that affects educational quality is nutrition and other health factors. Research demonstrates how critical a safe and healthy environment is to achieve full student potential, though this was not a focus of the IEQ Project and remains an area for further research.

# WHY FOCUS A PROJECT ON IMPROVING EDUCATIONAL QUALITY

## Issues of Quality in the Classroom

In a dark, bare, cement block room, students sit on long, back-less wooden benches. Those who have notebooks struggle to balance them on their knees. The teacher, with his back to the class, scratches out a long-division problem, 390 divided by 15, on the rough blackboard. As the teacher conducts the lesson, the children chant the equivalent of, "15 into 39 goes 2 times. I write the 2 above. Two times 15 is 30; I write the 30 below, and subtract." They continue in a steady, monotone cadence, reciting their way through the problem. When the teacher completes the division, they copy the example in their notebooks. Perhaps three-quarters of the children fail even to copy correctly what is on the blackboard. The teacher moves to the next example and the chant begins again.

All too frequently, constrained resources leave classroom teachers isolated and prevent their receiving the most minimal support and materials to teach and for children to learn. As a consequence, teaching and learning can be characterized by the classroom described above: rote recitation, teacher-centered pedagogy, lack of individual or student-to-student activity, and a torpid atmosphere. The confluence of several factors makes this the typical description of the "quality" of teaching in classrooms in developing countries.

The challenges to teachers are formidable in part because of the many disconnects within the education system. Often teachers and students lack the most basic instructional materials. The instructional materials that they do have may not be grade-level appropriate, and the scope and sequence of the curriculum demand skills that most children have not mastered. Even when teachers have materials, many do not know what to do with the materials or how to lead a child through effective learning. This is because teachers themselves have limited education and training. School directors have limited opportunity to provide instructional support to their teachers. Parents are concerned about educational quality and want their children to have access to a good education, but they may be uninformed about what constitutes good education, and therefore, may fail to make demands. In brief, schools struggle in isolation, remain mired in uninspiring teaching techniques, and lack even the most essential of accommodations.

This is the reality that faces educators when they take on the issue of educational quality. How do education systems and their stakeholders transform this reality? And how do collaborators help them respond to this challenge? Classrooms and schools that fit the above description do not promote learning, and access to them does not constitute education.

This paper addresses these issues by framing educational quality in terms of *who learns*; *what is learned*; and *how it is learned*. In the process of defining quality, various

stakeholders are involved in a learning process grounded in gathering information and engaging groups of people in individual and joint reflection that leads to specific actions to improve quality.

## **Framework for Improving Educational Quality (IEQ)**

### **Context**

The IEQ Project provides a framework for addressing quality in developing countries. This five-year, five-country project was initially funded by the United States Agency for International Development in 1991. The project, continuing now as IEQ II, has followed almost a decade of attention to access and efficiency. That experience led to the recognition that increasing the number of children entering primary school and advancing in grade level was insufficient, if children left school without at least basic literacy and numeracy skills. IEQ was a vehicle for shifting the Agency's focus to the quality of learning. Specifically, IEQ promotes an approach to educational quality that:

- relies on real information about what children are or are not learning, and documents actual teaching and classroom management techniques;
- engages school and community level actors in reflection on how the school and home environment, as well as classroom teaching practices impact children's learning;
- uses the above information to inform policy makers.

Underlying this discussion is the acknowledgement that that all children have the right to a quality education and capable of learning to the highest standards.

### **Quality Linked to Learning**

The framework of addressing educational quality focused on what happens in the classroom and examined it in terms of *who learns; what is learned; and how it is learned*. In each country in which IEQ worked, the process began by defining quality being linked to learning outcomes within a framework of a "work in progress," which recognized the need for some minimum school standards. These standards included defined levels of numeracy and literacy; an environment that enables learning to take place; instructional resources available to all teachers and pupils; and teachers with levels of education qualified to facilitate student learning.

### ***Who Learns***

Meaningful discussion and action to improve the quality of education must use concrete information about **pupils** in the classroom.

### ***What Is Learned***

Educational quality is linked to achieving learning outcomes. Therefore information about pupil performance provides data on what is learned.

### ***How It Is Learned***

Improving the quality of education in the classroom must include information about instructional practice, and the classroom environment.

All attempts to reform any aspect of education ultimately must reach the classroom. What Happens there must be known and shared with diverse audiences.

### **Partners**

IEQ is engaged in a continuing dialogue about what constitutes educational quality, i.e., the translation of “quality” into meaningful knowledge that engages educators to dynamically examine and evaluate quality at all levels of an education system. In each of the five participating countries: Ghana, Guatemala, Mali, South Africa and Uganda, IEQ engaged the stakeholders in a discussion of the means of improving learning. The process focused on the specific national educational priorities and involved people throughout the education system, such as those responsible for setting policy, developing tests, training teachers, preparing textbooks, teaching pupils, and supervising teachers.

### **Actions**

Teachers and students are at the heart of educational reform. Efforts to improve the quality of education in developing countries must consider the everyday realities of the classroom. Solutions to learning problems must involve educators at all levels of the system, especially teachers. Improving the quality of education in the classroom must be based on knowledge and resources from the school and the community.

## Conclusion

IEQ provides the basis for drawing a conceptual framework for educational quality in the developing countries. The process consists of three phases, the first being *assessment of who learns, what is learned, and how it is learned*. Classroom observations, achievement measures, and interviews provide rich data on individual and group experiences in schools and classrooms. In the second phase, the community and education systems are helped to *assimilate* the findings from the assessment through meetings, dialogue, seminars, and conferences. At these events, assessment data are presented to generate a discussion of their implications for the quality of the education system, e.g., teacher practices in classrooms, teacher training, policy development, and textbook preparation and distribution. The third phase is the *action* taken after having assimilated this information. Such action focuses on improving learning throughout the system, e.g., a policy shift that does not hold teachers accountable for damaged texts, a community learning center to help pupils with school work, the use of folk tales to improve oral communication.

## Summary

IEQ launched an approach to examine educational quality that was based on research focused on the classroom, generated by the host country, included all levels of the education system, and worked as an ongoing cycle (Adams, 1995). Knowledge accumulated was shared and used to improve the quality of instruction and learning in the schools as well as to formulate policies that strengthened the ability of the education system to educate its pupils.

The building blocks produced by our partnership with the participating countries in IEQ may be summarized as follows (Schubert, 1996):

**1. IEQ facilitates a system-wide learning environment that is collaborative, reciprocal, continuing, and democratic and that induces positive educational change.**

The quest to improve is often confused with the need to “fix,” thereby resulting in superficial changes that mask fundamental problems. Real learning about how and where to improve educational quality takes time. It requires the involvement and ownership of educators throughout the system in all facets of a reform. Policymakers need to listen to local educators. Local educators need to listen to policymakers and feel they are part of the system. This requires breaking down the physical and mental walls that isolate efforts to improve education.

**2. IEQ uses research as a tool for providing a living perspective on the reality of educational reform.**

The local professional teams apply qualitative and quantitative methods to collect and analyze information. The undertaken research reflects concerns of national educational reform efforts. The instruments used in each of the five IEQ countries continue to be used by the local researchers, in new and expanded applications.

**3. IEQ examines the relationships among factors that influence the quality of learning.**

IEQ tries to avoid the “fragmentation” of quality by focusing on the relationships among the factors that influence school quality. Linear, piecemeal thinking is ineffective if fundamental and systemic improvement is desired; for example, examining only the availability of textbooks without knowing how and under what circumstance textbooks are used by both teachers and pupils will not inform us about pupil performance. Interventions may represent changes in the use of factors that influence school quality, not necessarily the introduction of new factors.

**4. IEQ provides concrete information about instructional practices, pupil performance, and the learning environment within the context of where improvement is needed.**

Changes in education under the rubric of reform often occur in reaction to outside factors that may bear little relationship to the real world of the classroom. IEQ provides information about educational operations in the classroom. Improving the ability of pupils to learn is at the heart of the reform.

**5. IEQ facilitates a process where agreed-upon principles become the basis for a country's procedure to improve policy and practice.**

The IEQ approach requires assessment of the education system at the school and classroom levels, assimilation of findings that are shared through the system, and actions based on the findings at the "policymakers and the classroom level" of the system. This cyclical process becomes standard operating procedure. It permits a refinement of the questions asked, understanding of the effects of change, and modification to interventions to improve the system continually. The flexibility of the approach permits individual countries to use the most appropriate ways to inform and improve their own reform efforts.

## HOW IS QUALITY LINKED TO LEARNING

### IEQ Countries View of Educational Quality

In Ghana, ten years of “successful” education reform were seen in a new light when it was revealed that 85 percent of sixth-grade students scored less than 40 out of 100 in English on a national test of language proficiency. In fact, most of the scores on the test, which was multiple choice among four possible answers, were in the range of number of correct responses attributable to guessing (i.e., one in four correct). Suddenly the long effort at restructuring and reforming education, which had been supported by more than 500 million dollars of investment (government and donors), was questioned. Did all that work mean anything if the education system was failing at one of its most basic tasks, helping children learn to read and write in English (Harris, 1996)?

The example above is by no means unique to Ghana. Rather, it illustrates a common dilemma shared by many who seek to reform education systems in less developed countries, and indeed, in more developed countries as well. In all countries participating in IEQ, information about the realities of the classroom was not treated as a negative to be hidden away, but instead as a beginning point in a collaborative effort to improve learning and educational quality.

IEQ helped collect further data to shed light on educational quality in Ghana. In-depth research in a few schools provided insight into the quality of the learning opportunities being created in Ghanaian classrooms. For example, school profiles showed that in schools where they were available, textbooks were not distributed to students. Teachers, who were held financially accountable for damaged books, were afraid to give them out.

Whether pupils had the skills to comprehend grade-level texts was another avenue of inquiry. IEQ in Ghana developed Curriculum-Based Assessment instruments to determine what students know and do not know in relation to the scope and sequence of the primary school curriculum (Harris, 1994). Testing of students revealed that only 4 percent of fifth-grade students could comprehend fully a fifth grade text. This kind of information began to reveal some of the factors that explain why students were doing so poorly on a criterion-referenced test of language and mathematics proficiency (Harris, 1996).

These instruments provided specific results like those represented for one fifth-grade student:

Adjura is a girl in the fifth grade in a school in a small town in central Ghana. When initially tested, she was not able to do grade-level work. Adjura was able to:

- write 21 words that were correctly spelled;
- read only 24 percent the “most used” words from the fifth-grade text;
- with assistance, read correctly 64 percent of a text;
- read aloud 11.5 words per minute;
- decode words with 44 percent accuracy;
- score 28 percent correct on questions of reading comprehension.

The objective in the IEQ Ghana studies was to show whether a student can perform grade-level work and, if necessary, to probe downward through the curriculum to the point where a child can perform successfully. The findings produced by such an assessment may be used for diagnostic profiles of individual students, classes, and schools. Such profiles may be useful throughout the education system by teachers, headmasters, teacher trainers, curriculum developers, and policymakers. The type of information gathered from Adjura’s test results not only provides a starting point for discussion about the status of pupil performance, but pinpoints opportunities for improvement.

Interestingly, the assessment revealed that Adjura could read only 24 percent of the most frequently used words in her text on her own, but when assisted, she could read to 64 percent of the words. Does that kind of information suggest some instructional strategies? Also, when essentially the whole class cannot read the grade-level text, is it not apparent that an alternative to assigning reading from the text is needed? If, in general, pupils in Ghana have such poor skills, what is needed to help them learn? And how should teacher trainers, curriculum developers, and policymakers respond?

Clearly, one cannot talk about children having access to education if that education does not include the opportunity to actually learn and acquire basic literacy and numeracy. Many arguments can be made for educational quality, economic opportunity, the link between education and health and family planning, literacy and critical thinking as the foundation for democracy, and the growing importance of education in an information-based and technologically advancing world. But unless the quality of education is addressed, in most cases education systems are supported in which no, or at best limited, learning is taking place (or in which some children are learning despite the obstacles the system creates). This as a waste of resources.

The reality is that most classrooms in developing countries not only fail to create good quality learning conditions, they actually foster conditions hostile to learning. Children arrive at school with different intelligences, personalities, and learning styles (Gardner, 1991). They have drastically different needs and therefore will learn and progress in their own ways and at their own pace, but all can indeed learn. At times it seems that schools and schooling treat children as if these differences did not matter. Worse, for too long schools have been organized on the assumption that learning is something separate from the rest of students' lives, has a beginning and an end, and needs a teacher or teaching to occur. Children are therefore placed in rooms free from distractions and forced to pay attention to a teacher and focus on exercises no matter how tedious or uninteresting they may be. Is it surprising, then, that most institutional teaching is perceived by would-be learners as irrelevant, boring, and arduous (Wenger, 1996).

More simply, do schools and teachers do the most basic things needed to help children learn? For example, additional IEQ research unveiled an obvious dilemma. Ghanaian children are expected to learn to read in schools that almost never expose them to written material. They are expected to learn to express themselves orally in schools where chanting is the primary method of responding. The teacher holds up a pen and says, "What is this? This is a pen. Class, this is a..." And the children reply in chorus, "Pen." In the best cases, the teacher may elicit this one-word response from an individual child or two. Clearly, much can be done to improve the quality of such learning situations.

Ghana is by no means unique in this example; similar situations exist not only in other IEQ countries, but many others. IEQ provided the opportunity to examine teaching and learning in depth; similar investigations are likely to reveal similar conditions elsewhere.

In Guatemala, IEQ Project studied the impact of the *Nueva Escuela Unitaria* (NEU) program, an active child-centered learning program, on classroom interaction patterns, achievement and retention of rural Guatemalan children. The research included observations in the classroom, interviews with parents, and achievement testing in 10 NEU schools and 10 comparison schools. The study was longitudinal over three years, testing and observing the same children who began in first- and second-grade in 1993.

IEQ/Mali measured literacy in national languages, and studied the link that exists between literacy assessment and the curriculum, in order to improve the quality of primary education.

In South Africa, IEQ Project conducted evaluations in collaboration with non-government organizations (NGOs) that provide in-service training (INSET) to unqualified teachers in disadvantaged schools in South Africa. The study examined the impact of teacher training in learning-centered methodologies, and materials development and usage, on improving the quality of education at the classroom level.

In Uganda IEQ Project investigated the antecedents and consequences of the teacher work environment as they correlate to achievement in the classroom. The antecedents included policies, parent and community support, children's conditions and school

culture; and the consequences included the schooling experience, instructional practice, and achievement.

The above description explains how each of the countries viewed and examined educational quality in their context. Throughout the process learning linked to quality is the key ingredient; and unless problems related to learning are addressed, educational quality cannot be improved.

# Learning Linked to Educational Quality in the Classroom

## Introduction

If educational quality must be linked to the achievement of learning outcomes, it is critical to know what is intended by the word *learning*. Educational quality, while referring generally to the conditions that support learning (such as in the research on effective schools),<sup>1</sup> ultimately has to do with whether learning is taking place or not. Educational quality is much more than the sum of improved school buildings, teacher training programs, curricular reforms, development of educational materials and the provision of achievement tests.

## Definition of Learning

Learning is not simply memorizing what is taught, nor is it being able to perform on a final examination. Fundamentally, learning people's capacity to benefit from and contribute to society, while increasing their capacity for further learning (Wegner 1996). Learning a particular skill provides students with access to work for and with others who value that skill. This is as true of theoretical mathematics as it is of carpentry. Other opportunities include the chance to influence political or civic affairs, promote family development, and protect the environment (Levinger, 1995).

## Measurement of Learning

If educational quality has ultimately to do with learning, a problem educators have often faced is the issue of measurement. On one hand, the definition of learning as personal transformation and growth across the full spectrum of human endeavor provides outcomes that do not lend themselves to measurement. On the other hand, education systems need to have fairly standardized and reliable measures of whether children are learning. Those who wish to pay attention to the deeper definition of learning often oppose the advocates of standardized achievement measures. Consequently, educators have done themselves a great disservice by protracting this debate.

IEQ has worked to develop simple, easy-to-understand means to measure what children are or are not able to do (and thus what they are or are not learning). How many letters can a child recognize? How many words can she write? Can he add single digit numbers? The intent of IEQ is not to reduce learning only to what can be measured. It is necessary to fill an incredible void that exists in most developing countries%the lack of any systematic data that reflect what children are learning in school. It is important that

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<sup>1</sup> Research on effective schools is well summarized in Lockheed and Verspoor (1991) and Heneveld (1994). The international survey of five countries carried out by Carron and Chau (1996) illustrates the centrality of the school in determining educational quality.

measuring those basic building blocks of learning in the quest for an elusive measure of the perfect, all-encompassing educational outcome does not occur. At a minimum, simple testing instruments of what children can do allow teachers, parents, and education officials alike to talk specifically about what children are learning, thus “uncomplicating” the issue of educational quality.

### **Factors Influencing Learning**

Quality is ultimately defined in terms of how much learning actually takes place, but it also depends on whether the conditions for that learning are being created. In addition to tests of children’s capacities, IEQ therefore promotes gathering data on the circumstances which children are developing those capacities. What do teachers do in class? What is the school environment like? What is the relationship of the community to the school? The results of tests of children and of observations and interviews provide a concrete base from which teachers, parents, and education officials can look critically at the quality of education. IEQ has helped educators at all levels and parents ask questions like, “If children are only able to write a few two- and three-letter words, then what elements of support for quality learning are missing in their education?”

In Uganda, a team of Ugandan IEQ researchers launched an investigation of school effectiveness, asking questions identified by key policymakers and educators at a national forum on educational quality. Their research focused on: actual conditions of primary schools; classroom interactions; teacher motivation; community involvement; relationships among School Management Committees, PTAs, and school administrations; and pupil proficiency in reading, writing, and basic math.

Twenty-four schools participated in the study from three regions. The findings revealed that basic facilities and supplies were not in place for effective teaching and learning. For example, at one school site, more than 50 children share one math book. Few instructional materials could be found in most classrooms visited. Support within and outside of the system was lacking so that schools were left to fend for themselves.

### **Measures to Support Learning**

The transformation of schooling to truly support learning is not simply a matter of gaining more local support and international financing to improve the physical infrastructure, teacher qualifications, instructional materials, and management systems. A considerable amount of research has been conducted on what can be described as the “education production function” to define those factors considered to influence educational quality (Fuller, 1986; Heyneman, 1989). However, the research usefulness in improving educational policy, planning, and management, to say nothing of improving learning, has been problematic. In one recent review of over 400 studies of student achievement, Hanushek (1997) found that there was no strong or consistent relationship

between student performance and school resources. He notes, "the clearest message of existing research is that uniform resource policies will not work as intended...Simply providing more funding or a different distribution of funding is unlikely to improve student achievement."

A variety of perspectives and explanations have been proposed regarding why increased resources are necessary but not sufficient for improving learning outcomes. One explanation is that national policies and plans in most developing countries simply are not effectively implemented (Craig, 1990). Another is that our analytic tools are inadequate and they do not take into consideration the complex hierarchy of factors that must be addressed to improve quality (Riddell, 1997). These include the health and well being of the child and family; the conditions and relationships within the classroom; the culture of the community and parental involvement in the management of the school; and the policies, planning, and organization of the larger educational system. Others argue that national policies and programs (for countries receiving international assistance) have failed to focus on the school as the crucible where learning takes place (Heneveld, 1994). Finally, others observe that the centrality of the learner consistently is left out of the equation (Abbott, 1997).

It is becoming apparent from what is known about learning that the traditional school is not the answer; rather, it constitutes much of the problem:

It is, in fact, nothing short of a miracle that the modern methods of instruction have not yet entirely strangled the holy curiosity of inquiry; for this delicate little plant, aside from stimulation, stands mainly in need of freedom; without this it goes to rack and ruin without fail. It is a very grave mistake to think that the engagement of seeing and searching can be promoted by means of coercion and a sense of duty.

Albert Einstein (quoted in Abbot, 1997)

If the focus of policy and practice for improving educational quality should not be the continuing embellishment of the traditional school, then what is quality? A review of perspectives articulated within national policy formulations and in research literature reveals that the concept of educational quality

- Is multidimensional and relates to

Outputs: learning achievements and economic/social outcomes,

Processes: the activities of students, the art of teaching, and the tasks of administration, supervision, education planning and policy,

Inputs: the financing, infrastructure, instructional materials, quality of teachers and staff, and professional development opportunities and actions;

- Is grounded in cultural traditions, social relations, and economic and political life and therefore is unique to each nation and culture;
- Centers on community participation, dialogue, and involvement in provincial and national development processes;
- Is dynamic, as the definition of educational quality changes over time (Adams, 1993).

## Local Involvement

The implication of these findings is that quality is not a given, or an externally defined standard. Rather, it reflects social negotiation and relationships that are based on experience and informed by cycles of applied research, reflection, and action. From this it follows that quality cannot be imposed; it must emerge as the result of dialogue, consultation, and the development of shared definitions leading to consensus that evolves to meet changing circumstances.

Because quality is not a given, a focus of IEQ is to promote dialogue around what constitutes educational quality, and around what the variety of concerned actors% students, parents, teachers, administrators, supervisors, policymakers – can do to improve it. Heneveld (1994) has had success using an effective schools framework for engaging educators in Africa in dialogue about what influences educational quality. IEQ animates that dialogue with specific

information about what children are learning and what conditions prevail in and around schools. If tests show that children have poor to no reading skills, and observations of classrooms, teaching, and homes indicate that children are not exposed to written material, dialogue can then focus on what needs to happen to address this specifically. To learn to read, children need to encounter written material. The first obstacle is how to get more written material in front of children, collectively and individually. Parents, teachers, and education officials in Ghana proposed labeling things in the classroom, giving an assignment to children to copy examples of words or phrases they see around them (signs on stores, labels on cans, etc.), and having children use textbooks from the lower grades that have simpler language. Since the dialogue was grounded in information, interventions could be proposed that responded directly to the real learning needs of children.

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In April 1994, the IEQ Mali team hosted a national seminar to share with stakeholders (e.g., parents, teachers, policymakers, community leaders) findings that revealed factors that influence children's language learning in early primary classes. The outcomes of the three-day dialogue included recommendations for specific interventions introduced into pilot schools. This was the first time such a dialogue had taken place in Mali. Quality Link, Paper 6, Winter 1997

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## **Intervention at All Levels**

The process of having interventions grow out of real data on student learning and school conditions can occur at the level of an individual teacher in her classroom or a group of teachers at a school, district, regional, or national level. IEQ seeks to promote informed deliberation and learning at all these levels. For example, the education systems in Uganda and Ghana learned that existing policy on textbooks, which made teachers financially responsible for damaged books, discouraged books being distributed. In both countries, the policy changed.

Jerome Bruner has noted that planning education cannot be conceived as a technical business of simply applying learning theory to the classroom or of using the results of subject-centered achievement testing to modify practice. Rather, it requires a "complex pursuit of fitting culture to the needs of its members and of fitting its members and their ways of knowing to the needs of the culture" (Bruner, 1996). Today the role of the educational policymaker and planner is not so much to design the details for a national reform plan. Instead, their role is to encourage and help design processes required for local policy dialogue, initiatives and innovations that reflect local objectives and values as well as national standards. The participatory policy-planner also helps to create national strategies that are built on successes at the community level in achieving learning of high quality for all children.

# WHAT IS THE IMPLICATION OF IEQ FOR STAKEHOLDERS

## Introduction

IEQ views planning for educational quality as a process of continual policy assessment and dialogue, conducted at all levels of society, with both the private and public sectors actively participating in determining the shape of education systems. No longer is the task of the policymaker and planner to pose as the all-knowing expert who invents, designs, and implements an innovation or a reform for an entire nation, financed through national and international investments. Rather, their role is to unleash capacities latent within all cultures and societies to innovate throughout existing formal and non-formal education systems (Farrell, 1997).

Helping design the process of policy dialogue and eliciting the right questions to focus this dialogue are key functions for national and international policy-planners. Using traditional convening roles, such as the *tertulia* in Colombia, the *pitso* in Lesotho, or the *guelaguetza* in Oaxaca, policy planners can build on long-standing cultural systems of continual assessment, dialogue, analysis, planning, decision making, implementation, and evaluation.

IEQ uses the framework of the following questions to focus public analysis so as to stimulate policy dialogue that will address all members of the society, including those the “disadvantaged.”

## Focusing Public Analysis

### *Who Learns*

Who has access to and benefits from basic education, including both formal and non-formal education? Who does not? Who is repeating grades? Who is dropping out after a few years of schooling? Who is in school but is not learning? Who is learning well and why? How is learning measured? How to know that learning has occurred? Are all students enthusiastic about learning? Can the nation assess whether all children are learning and developing their abilities both for their own good and for their community and nation?

A traditional perspective on educational quality has been that some children are intelligent and can learn well, while others are dull and cannot benefit much from formal education. The “best” schools, by this way of thinking, select the “best” students. This is considered to be quality.

This paper proposes a concept of quality that is not based on how well a few succeed, but on how well all succeed. Quality is attained when all succeed in learning, according to their learning styles and abilities, not just those who are judged in traditional terms to be the most able.

Clearly, by this definition educational quality cannot be achieved through a reliance on the current model of schooling, which is designed to sort, prioritize, and select individuals rather than to support learning for all. For example, our current system of standardized tests, and the field of psychometrics that defines that system, is based on analysis of the distribution of performance. This approach to assessment, which is practiced in most formal schooling systems throughout the world, is based on the supposition that the population is normally distributed in terms of learning. The population of learners is sorted into the brilliant, the bright, the average, the dull, and the hopeless % with the latter two categories bracketing the greater part of populations usually described by the term *disadvantaged*.

Rather than contributing to enhanced learning, the prevailing systems of formal education place priority on screening students, permitting only those identified at the upper end of the distribution to be given further opportunity. The “weakest” are tracked with other low performers. They are characterized as disadvantaged in terms of learning and also often in terms of origin, status, and opportunity e.g., girls, ethnic and linguistic minorities, the poor, and the rural.

Contemporary educational research and theory recognizes that every child is a learner, and that the human brain has enormous capacity and potential that is largely undeveloped (Kotulak, 1996). Recent work in cognitive science shows that intelligence is not fixed genetically, and that it can be significantly enhanced especially during the first three years of life within a nourishing, supportive, and sensory-rich environment (Perkins, 1995; Levinger, 1994). This scientific evidence undermines many of the traditional assumptions governing approaches to the disadvantaged, who were treated, if at all, through the application of special educational programs (Bereiter & Scardamalia, 1993). What is now recognized is that all children respond well in a loving, nourishing, challenging and stimulating learning environment (Gardner, 1983, 1993; Levinger, 1994). Practical guidance on how to exploit what is known about the learning process in developing new forms of school organization, continual teacher training, new active teaching methods, and creative learning environments is increasingly available (Bruer, 1994; Caine & Caine, 1995). Countless educational and school-reform projects throughout the world have illustrated the feasibility of applying this knowledge successfully in under-served, poor rural areas and in cultures as varied as Upper Egypt (Zaalouk, 1995; Hartwell, 1996), Colombia (Scheifelbein, 1991), Guatemala (De Baessa, 1996), Mali (Muskin, 1997), and Malawi (Hyde, Kadzamira, Sichinga, Chibwana & Ridker, 1997).

### ***Implications for Policy and Research***

The experience of all pupils becomes the main concern. This means that who is not learning and why is the primary focus. The goal is to empower teachers to address the differing learning needs of all children and to use methods of active group and individual learning.

Instruments and methods to assess what children actually do know must be developed. This is quite different from tests that show how learners do on a set test in relation to others. A research agenda is required to develop, and apply new assessments of learning with the aim of improving children's learning, rather than of judging performance after a pre-established period.

Teachers as researchers should focus on identifying those who are not in school or in community learning centers, and why. They should address their learning needs and provide enriched learning environments that attract them to participate in group and individual learning activities.

These questions guide the process: What do children learn outside of school? What capacities, learning abilities, and knowledge do they bring to school?

What are the implications, for the schools, of emerging insights relating to child development, health, and nutrition? What roles should home and community play to ensure good early childhood development in collaboration with schools and community life-long learning centers of the near future?

How can the learning of all children in the classroom be enhanced? How can learning experiences ensure that children are prepared for the challenges of a rapidly evolving world?

How should learning be measured to ensure that all children develop their inborn abilities to the extent possible? Are they gaining essential skills required for effective life-long learning (including critical thinking, problem solving, and creativity)?

### *What Is Learned*

How does what is learned contribute to the individual's well being and to society? What is the nature of curricula, and how are they implemented in schools? What current curricula are irrelevant to personal and societal development? What new, changed, or adapted curricula are needed? Of these new curricula, how much should be developed or selected locally?

The traditional response to the question of what should be learned has been that educational quality is best served when there is a rigorous, standardized curriculum structured by the academic disciplines, and taught to all students at the same time and pace. Strict academic standards are observed by covering all of the material in the syllabus. The teacher who is “covering” all the topics in the syllabus usually is deemed to be competent. Students are tested and ranked based on their ability to relate back the content of what they have been taught. Only a few students can be rated excellent, and the toughness of the marking often is considered to reflect high standards and good quality (Fantini, 1986). It has been observed that schools are organized to teach subjects, not children.<sup>2</sup>

Everyone would like many subjects to be taught in schools. However, the use of the word taught should not be permitted if learning doesn't follow. It is not correct to say ‘I taught my son to swim, but every time he gets in the water he sinks to the bottom.’ Only if learning occurs can we say that teaching has happened.

Chester Finn, 1990

An alternative concept is that the quality of education should be gauged by the degree to which what is learned contributes to society<sup>3</sup>. Every culture devises means of establishing standards of competence, and of determining how and to what degree those who receive education attain those standards. There are as many different approaches to

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<sup>2</sup> Benavot and Kamens (1989) found that virtually all countries incorporate the same subjects into the curriculum of their primary schools and give them the same or similar emphasis. These subjects include reading and writing, mathematics, science, social studies and moral and aesthetic education. More than 50 percent of school time is used to teach language skills and mathematics.

<sup>3</sup> Although virtually every national policy on education states such an intent, the way that subjects are defined through the official curriculum, generally dominated by subject matter experts from universities, in fact reflects what we are calling here the traditional concept.

this central social problem as there are cultures and life requirements. They vary from the Masai test of the young warrior who had to kill a lion to show his courage and skill, to the woodworking apprentice who must complete a masterwork independently to receive the rank of craftsman, to the requirements for professional certification of doctors who specialize in surgery.

Fundamental to educational quality is whether what is learned contributes to social well being and to economic progress, in short the relevance of what is learned and the degree of mastery achieved by those in the education system. These concepts are the essence of what is called “external efficiency” in education.

An alternative approach to the question of what is learned derives from the research on the process of learning and the understanding of what the child brings to the school (Gardner, 1991), as well as the definition of basic learning needs as articulated by the *World Declaration of Education for All*. This body of work suggests that most curricula are overburdened with imparting facts and are short on building problem-solving skills, expanding critical thinking, and inspiring creative thought, all of which are essential for students to respond to social and economic changes in the world today. Much of the best educational research and practice points to a concept of curriculum and learning in which pupils increasingly take responsibility for setting their own learning objectives, based on authentic, real-world challenges within their own environment. To achieve these objectives, learners’ activities require a multidisciplinary approach and skills, and should be pursued in collaboration with classmates. Teachers act as learning coaches, guides, and facilitators rather than as fonts of knowledge or as judges. They help children to explore learning resources; to synthesize, analyze and interpret information; and to create new ideas.

It is critical to realize that to institute and maintain these approaches, higher per-pupil unit costs are not necessarily required, and that they are particularly appropriate for engaging the minds and hearts of those individuals who have been designated as *disadvantaged*.

In Guatemala, the three-year study of the Nueva Escuela Unitaria active learning approach revealed that more children stayed in school and made yearly progress toward primary school and completion. This program is expanding in a number of rural schools, and program elements such as local teacher circles aimed at supporting student governance have been incorporated into professional development programs at the Ministry of Education.

### ***Implications for Policy and Research***

Appropriate curricula need to be developed, selected, or adopted by each learning community. What do parents and community leaders want to preserve of their cultural and linguistic traditions? What new and modern curricula do they and their children want to adopt, and why?

Teachers need to be able to examine connections between curriculum objectives and the learners' own experiences within their communities. To what extent does the curriculum delivered in the classroom lead to actual problem solving related to issues within the learners' (and families') lives and to their future work endeavors?

To what extent do parents and community leaders view schooling as a means of escape from harsh conditions of the community, or as a means of improving the conditions and opportunities within the community? Do they think there is an economic future for the community? Can those who are educated in the community contribute to this? How does this perception of community needs influence their relationship to the schools and to the education system at all levels?

How can students, parents, teachers, and community leaders best become involved in determining school contents and in assessing their validity for their lives? How can they best share these experiences between communities and with District Education Offices and Ministries of Education?

### *How It Is Learned*

What are the processes of learning within the school? How do they reflect the increasing body of knowledge about the conditions that enhance learning? Are informal and active teaching methods of local cultures used to advantage to promote student-directed learning? Are key educational materials designed and developed locally? Are teachers prepared to guide these efforts?

Schiefelbein (1991), reviewing a decade of research on primary school quality in Latin America, identifies factors that prevent schools from improving:

- Few teachers have ever been in an active learning experience;
- Too much is expected from teachers' class performance % syllabi and textbooks are big, full of unrelated bits of information, lacking in ideas, bereft of themes, and inert with respect to reasoning skills;
- Children are viewed as blank slates on which teachers are to write (which they do almost literally in the extensive use of the chalkboard, with pupils' copying word for word into their notebooks);
- Too little time is allowed for students to learn % there are many unscheduled days off, teachers and pupils come late or are absent, and what little time is available for use in class is often poorly managed;
- Few learning tasks motivate students to learn; and there is poor, or no, linkage between what is taught and daily life. This is particularly true of rural schools, since textbooks when available, typically portray urban, upper class environments.

These distressing conditions appear daunting, particularly when linked to the perception that public financing, parental contribution of school fees, and community contributions in the poorest countries cannot be increased significantly.

Research into the availability and use of instructional materials in Ugandan and Ghanaian primary school classrooms revealed that many pupils were not receiving instructional materials because teachers were personally accountable for damaged or missing books. Upon learning of this situation, policy changes in both countries relieved teachers of the financial responsibility to pay for the books.

However, what is important about these conditions is that most of them are not so much a matter of resource shortages, but reflections of practices conditioned by and beliefs about learning, effective teaching methods, and the role of the teacher. Contemporary research and theory on learning provide concepts quite different from what is practiced in most schools (Caine & Caine, 1997):

- Learning is natural, all children are learners, and they are learning all of the time;
- Learning is social % it changes one's ability to participate in society;
- The search for meaning and purpose drives the motivation to learn;
- Learning is enhanced by challenge and inhibited by threat;
- Learning takes place by engaging in meaningful practice;
- Learning requires exploration, error, and sympathetic feedback.

These insights into the process of learning are reflected by research on schools and classroom experience in Asia. Stevenson (1992), in a series of large, cross-national studies during the 1980s, compared learning achievement for children in primary schools in China, Taiwan, Korea, Japan, and the United States. Significantly higher levels of learning achievement in Asian schools are not related (as is generally assumed) to rote learning and repeated drilling by overburdened, tense youngsters. Rather, children in these Asian schools are motivated to learn, and teaching is innovative and interesting. Characteristics of the educational experience for the Asian children include the following:

- There are high expectations for children's performance.
- Educators believe that effort, not inherited aptitude, is the key to achievement.
- Children see schools as fun and learning as interesting.
- Teachers make subjects interesting by relating them to children's everyday lives.
- Considerable time during the school day is given to social activities and games.
- There are a variety of teaching methods and hands-on activities.
- Knowledge is not forced upon children, but they are led to construct their own ways of representing what they learn.
- Frequent use is made of feedback and diagnostics.

A considerable body of literature now exists on how children learn and on the environment necessary to support that learning (Jensen, 1998). There is also extensive experience, some of it in extremely poor, disadvantaged regions of the world, that demonstrates that this knowledge can be applied effectively, at reasonable cost, to provide educational opportunity of high quality virtually anywhere. The precepts defining how learning described in this paper takes place have guided successful school reforms in cultures as varied as Upper Egypt, Balochistan in Northern Pakistan, rural Colombia, the Mayan highlands of Guatemala, the rural areas of Kerala in India, Botswana, Mali, and in urban areas of the United States. It is not so much a lack of knowledge about how to improve learning for children by providing the right conditions %even in the midst of poverty and deprivation % as the lack of a firm and shared commitment to bring this about on a large scale.

An IEQ exchange on quality assurance through monitoring and evaluation concluded IEQ # I in South Africa. This “indaba” (a representative meeting on a matter of utmost importance) reported on the findings from a series of NGO classroom-based assessments of the impact of their teacher training programs. Representatives from provincial and national departments of education, colleges of education, and in-service teacher-training NGOs participated in this national dialogue to review the findings, examine the instruments and identify follow-up activities.

### ***Implications for Policy and Research***

How can we promote a wider knowledge and understanding about the findings on cognitive development and learning among policymakers, educators and the general public?

Given the increasing number of educational programs that are applying this knowledge, particularly for disadvantaged populations, how do we disseminate information to ensure this experience is better known, analyzed, and understood?

How do we scale up successful pilot programs that include only a few hundred schools to be able to cover thousands of schools for all population groups in a nation or a cultural or economic region?

## **HOW TO IMPLEMENT A LEARNING-BASED APPROACH TO QUALITY**

IEQ draws on a vision of educational quality rooted in learning and applies the three questions % who learns, what is learned, and how it is learned – as the basis for its work. The work continues to be guided by core principles that shape country-based approaches to system-wide reform to improve educational quality.

For most of this century, it has been known that the best way to achieve quality in schools is through the development of sector policy and careful, educational planning that ensures that everything necessary for effective schooling is provided, for the most part, by the national government. These policies have involved overall staffing, curriculum, educational materials, supervision and control, and school distribution and size. Detailed education plans include the pupil-teacher ratio; the required qualifications for teachers; the requirements for instructional materials for each grade and subject area; the organization of supervision and professional support to schools and teachers; the distribution, size, and design specifications of schools; and the requirements for furnishing and equipment.

All of these centrally driven policies, strategies and decisions ideally are informed by the best research available. That research is expected to reveal which policies and other factors, produce the best outcomes at the least cost. The goal of policy and planning is to produce the desired results % based on the anticipated requirements of the larger economic and social system % at the lowest cost. Or, conversely, to produce the largest gain in educational achievement for a given cost.

This model presupposes that social systems, such as education, can be shaped as can a house, a bridge, or any engineered product. There are designs, blueprints, plans, costs, and logical linkages between particular inputs (such as textbooks) and outcomes (such as pupils' learning). It is a neoclassical economic framework applied to education. "Those who hold such a rationalistic view of decision making believe that complex social problems can be understood through systematic analysis and solved through comprehensive planning. They assume the existence of authoritative and objective decision-makers, whose actions could, if they were carried out correctly, solve economic and social problems. They believe that exhaustive analysis will lead to a concise definition of problems and generate alternatives from which optimal and correct policy choices can be made. They further believe that there are models and theories of social change that will aid in problem definition and policy formulation, and that the resulting policies will respond adequately to human needs, and there is a direct relationship between government action and the solution of social problems" (Farrell, 1997).

The reality of our experience with educational policy and planning is different. After more than 30 years of attempting to apply a rationalistic, top-down model of educational planning, the only certainty to emerge is that educational reform is extremely complex, differing radically among societies, within nations, and over time. What works in one place at one time does not necessarily transfer to another. This is not to say that the research and experience have been valueless; rather, the necessary, but not the sufficient, conditions for planned change and improved educational outcomes have been identified. Second, certain processes and principles, if followed, will lead to improved capacity and organizational learning, which in turn improves the management of those resources that are available (Rondinelli, 1993).

The participation of communities and teachers in defining and implementing policy is not simply idealism or a passing fad, in reaction to an overly bureaucratic approach to reform that has largely failed. Education planners and administrators will never have enough information to design sound programs if they derive such information strictly through technical means (DeStefano & Crouch, 1997).

Policies that support the kind of transformation implied by the application of current knowledge on learning need to ensure *top-down support for bottom-up reform* (Darling-Hammond, 1994).

Several simultaneous things need to happen if improvements in educational quality are to be large-scale, systemic, and thus sustainable. These emerged from IEQ I as principles to guide the second phase of the project.

**1. The focus of investigation is on what occurs inside classrooms and the impact on student learning.**

This focus on the classroom and student learning derives from attention to what is known about how learning occurs and how it can be enhanced. Implied by this focus is that all the actors involved in education need to reflect on what is known about learning and its implications for schools and teaching. The focus on classrooms also translates into a need for sound information about the reality of what goes on in classrooms and what students can and cannot do. That information needs to circulate in a variety of ways among the full range of stakeholders in the education system: teachers, communities, officials, NGOs, CBOs, church groups, parliamentarians, and so forth.

The focus on the classroom also implies direct support to teachers, schools, and communities. That support needs to be predicated on what is known to contribute to school effectiveness and has to be grounded in a collaborative reflection of what students are able to do, what the conditions created for them are (and are not) and what frameworks and insights can be applied to help all concerned learn how to improve the quality of that situation.

## **2. Involving a community of learners % within a classroom, school, community, education system, and internationally % promotes sustainable improvements in educational quality.**

Our approach to improving educational quality stresses the importance of the learning process not just for children, but for the full community of learners implicated – directly and indirectly – in facilitating the learning process. This paper speaks of a focus on the community of learners – within a classroom, within a school, within a community. All the adults supporting children’s learning need to see themselves as learners with a growing understanding of how better to teach and support children. It is through this community of learning that educational quality improves (and does so in sustainable way).

The individuals engaged in learning and thus improving the quality of education can be the extended community of learners that constitute a group of schools, a school district and its support offices, and eventually the education system. In this manner, a community of learners is extended to include eventually all the actors concerned with the education system. This implies the need to create learning opportunities for all these people. Those learning opportunities require information and a forum in which information can be confronted, understood, and debated, and in which new knowledge can be built. These learning opportunities also require directed facilitation (Crouch & Healey, 1997).

In extending the centrality of learning and the concept of a community of learners all the way to the system level increases attention to system learning. Or more directly, an education system is treated as a learning organization.

Reforms at the school or community level can prove particularly powerful when they contribute to policy dialogue and reform. Furthermore, reforms are less vulnerable to being marginalized or short-lived when they contribute to system learning. This paper advocates working to:

- Create the environment within which reforms can be tried out. Typically, existing bureaucratic practices punish innovation, while rewarding business as usual. This must be changed in order to develop and encourage action research at the school level.
- Use that environment creatively through full participation of key actors, building on existing knowledge, focusing on results, monitoring outcomes, learning how continually to improve pupils' learning, and filling space with good quality practice.
- Ensure that lessons are derived from innovation, allowing the drawing of implications for reshaping the policies, institutions, individuals, and relationships that constitute the education system. Such reshaping is evidence that the system has indeed learned.

### **3. Enhancing educational quality requires the forging of new ways of relating to one another based on collaboration within and among organizations.**

The preceding discussion implies the need for well-orchestrated collaboration. Improving quality in the way just described is in fact the work of forging that collaboration. It is only in redefining relationships that educational quality can improve: the relationship between a teacher and her students, the relationship among students, the relationship among teachers, the relationship between teachers and the director, the relationship between the school and community, and the relationship between the school and the education system.

In Ghana, the curriculum-based assessments that measured English proficiency in reading, writing and oral communications of more than 1,000 pupils in grades 2-5 pinpointed what pupils in rural and urban regions were and were not able to master before the critical end-of-cycle testing in Class 6. One outcome of these findings was the implementation of professional development seminars to improve instructional practice and to include local and regional supervisors in this process.

Building educational quality so that all children can learn requires a culture that supports organizational learning. This requires a focus on the teacher, who in turn focuses on the assessment of children's learning and uses the findings to constantly invent opportunities for improving teaching and learning. It involves policymakers and administrators in planning and conducting research in partnership with teachers, and using those results to provide the support children, teachers, and schools need.

## CONCLUSION

This paper began with a description of what an IEQ classroom looked like at the beginning of the ongoing process of assessment, action, and assimilation. It is only fitting that this paper ends in the classroom as well.

In Ghana, more children are now learning to speak, read, and write in English, teachers and pupils are coming to school more often, and teachers, pupils, and parents describe real changes in how children are learning. But the excitement does not end there. Circuit Supervisors, policymakers, teacher training college directors, education officers, advisors to donor agencies—representatives from throughout the education system acted on the results and brought about changes in the classrooms. The IEQ cycle of change not only continues, it grows. And the process that began with a handful of a few dedicated educators has been assimilated and incorporated into a learning system.

## **HOW HAS IEQ EVOLVED**

### **Focus of IEQ II**

IEQ overall purpose is to generate knowledge about the school experience and the classroom reality to inform decisions makers about policy and practice, and to develop local capacity for monitoring and evaluating educational results.

IEQ provided evidence about the extent to which educational reform benefited learning. Currently, it focuses on the educational context, and the importance of the local environment in improving quality. IEQ partner countries are El Salvador, Guinea, Guatemala, Haiti, Malawi, and Uganda.

### **IEQ Countries View of the Context of Educational Quality**

The following explains how each of the countries is examining the context of educational quality.

In El Salvador, IEQ collaborates with FUSAL to study early childhood education, and to examine the treatment of young children in home and school settings.

In Guatemala, the goals of IEQ are to assess and analyze aspects of schooling which affect the quality of bilingual education delivery.

In Guinea, the textbook is a central ingredient in instructional quality and IEQ in collaborating with the Ministry of Pre-University Education in assessing the textbook management.

In Haiti, IEQ examines the conditions for teaching and learning in a selected number of public and private schools that are participating in the USAID-sponsored Education 2004 project.

IEQ/Malawi is collaborating with the Malawi Institute of Education (MIE) and Save the Children/US QUEST (Quality Education Through Supporting Teaching) to focus on the classroom by providing frequent supervision and training to teachers and communities to support educational quality at the local level.

IEQ research in Uganda investigates the possibilities and complexities of initiating a participatory process to improve the quality of education.

In post-communist Eastern Europe and the Newly Independent States, educators are struggling to implement pedagogical practices to encourage active learning and critical thinking as well as to build stronger linkages between the schools and the communities.

Step by Step Program % an approach to early childhood development based on active, child-centered learning % has been adopted and adapted by each of the four ENI host countries, Bulgaria, Ukraine, Romania, and Kyrgystan. IEQ is working with host country researchers to collect a variety of data % from children's test scores to interviews with parents, teachers, and decision makers % to assess the impact of the Step by Step program.

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