

Improving Educational Quality (IEQ) Project

FOSTERING ENGLISH LANGUAGE LEARNING IN GHANA

Prepared for:
**Center for Human Capacity development
(formerly Bureau for Research and Development)
United States Agency for International Development
Washington, DC**

IEQII undertaken by:

American Institutes for Research

in collaboration with
**The Academy for Educational Development
Education Development Center, Inc.
Juárez and Associates, Inc.
The University of Pittsburgh**

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Contract # DPE-5836-C-00-1042-00

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Background

In 1992, the Government of Ghana with support from USAID launched an initiative to strengthen the policy and institutional framework required to insure a quality, effective, equitable and financially sustainable primary education system in Ghana by the year 2000 (Executive Summary, Ghana Primary Education Program (PREP), September 10, 1992). Major activities included (a) distributing textbooks and guides to schools in Ghana for 1.8 million school children, (b) organizing a comprehensive in-service training program for approximately 30,000 primary teachers, (c) developing end of primary cycle criterion-referenced testing (CRT) for grade 6 pupils in English and Mathematics, and (d) preparing and implementing an Equity Improvement Plan. Although strong support for primary education had been available in the schools in the 1960's and early 1970's, in the recent past, it had become necessary to hire many minimally prepared or untrained teachers, educational materials were scarce, and teachers were left to their own devices in their efforts to help children acquire basic literacy and numeracy (King, Glewwe, & Alberts, 1992; Ministry of Education, 1994). For example, in 1990-91, base-year figures showed that only 10% of pupils in primary schools had the basic textbooks (Kraft, 1994). One goal of the Ghana/USAID initiative was to reverse this trend and put sufficient textbooks into the schools for every child to have textbooks in English, Mathematics, Science, and Social Studies. Another goal was to provide training to teachers in instructional content and processes in each of the subject areas.

At about the same time the Improving Educational Quality Project (IEQ) was launched with the purpose of conducting classroom level research to guide the generation and adaptation of innovations that hold promise for improving the quality of primary education. To do this, IEQ formed partnerships with host country colleagues and collaborated with them in efforts to learn about and improve the school and classroom experiences of educators and pupils.

There was a natural fit between the primary school initiative and the goals of IEQ. Through a partnership between IEQ and the University of Cape Coast, the Centre for Research on Improving Quality of Primary Education in Ghana (CRIQPEG) was formed to conduct research designed to support and complement PREP innovations. Over a four year period, researchers followed a cycle of assessment-assimilation-action designed to assess factors affecting learning, share findings with stakeholders, collaborate with stakeholders on improvements, re-assess, and so on.

PRELIMINARY INVESTIGATION--GOING TO THE CLASSROOMS (PHASE 1)

IEQ/CRIQPEG researchers began by going to the classrooms to investigate the instructional process firsthand. To complement PREP activities, the focus was on sources and uses of instructional materials in primary school classrooms in Ghana. Following interviews with teachers, headteachers,

and Circuit Supervisors and over 200 hours of classroom observation, researchers concluded that textbooks were not reaching the children. Most of the classrooms did not have sufficient textbooks. However, even when textbooks had been supplied on a one textbook to two pupils ratio, it was rare for them to be in the hands of children. The tendency was for the books to be locked in cupboards while teachers continued their practice of writing on the chalkboard and asking children to read chorally from the board and then copy the words into their exercise books (Yakubu et al., 1993).

One finding from this preliminary investigation had an almost immediate impact. Teachers reported that they avoided using the textbooks because they feared that some books would be spoiled or lost and that they would be made to pay for these losses. When this information was shared with policy makers in the Ghana Ministry of Education and the Ghana Education Service, they took action. Within months, announcements were made and circulars distributed to school officials. The notices stated that teachers would not be made to pay if textbooks were consumed through normal use. Further, if a pupil was responsible for the loss or excessive spoilage of textbooks, the child's parents were to be held responsible.

Several additional explanations for why the books weren't being used emerged from this preliminary investigation. The language medium of the textbooks is English, the official language of Ghana. For children to use the textbooks effectively and to advance in the Ghanaian school system, they need to learn to communicate in English and to become literate. Yet, classroom observations revealed that, "The pupils cannot speak English. Communication between pupils and teachers was almost non-existent." (Yakubu, et al., 1993, p. 9). These observations and discussions with teachers suggested that textbooks were not aligned with the children's skill levels, and the teachers were not adequately prepared (lacking in training, skills, materials, etc.) to bridge the gap.

FOCUS ON LANGUAGE LEARNING (PHASE II)

Phase I findings, coupled with low scores on the first round of criterion-referenced testing (CRT), led policy makers to encourage CRIQPEG to investigate the problem further and identify solutions. Consequently, in 1994, CRIQPEG shifted its research objectives to focus on English language learning in order to shed light on the current status of English language proficiency and instruction and to stimulate and guide efforts at improvement. For the next two and a half years, researchers worked with educators, parents, and pupils from 14 rural and urban schools in the Central and Western regions. In the first year, all 14 schools received textbooks with most reaching the target 1:1 ratio in English and Mathematics. Textbook supplies were replenished periodically. In addition, instructional support was enhanced in 7 of the schools. What follows is a brief overview of the methodology of this investigation as well as highlights of the findings.

Research Questions and Design

The central research questions in the Phase II investigation were: (1) What are the current language skills of Ghanaian primary school children; (2) What are the factors affecting language learning; and (3) How can language learning be improved? When CRIQPEG began Phase II, little was known about the actual skill levels of Ghanaian primary school children. Phase I results had suggested that children were not interacting with the teacher, classmates, or the materials in ways that would promote English language fluency or literacy. CRT results had revealed that grade 6 pupils did not have sufficient literacy skills to respond correctly to written test questions drawn from the upper primary curriculum. Thus, while there was ample evidence about what pupils could not do, no one knew with any certainty what pupils could do. Therefore, the first task for CRIQPEG was to assess pupil skills along a continuum from “No English language skills” to “Mastery of language skills associated with the Ghanaian curriculum,” and to create diagnostic profiles of the children’s skills. These profiles served as the basis for instructional intervention development and they provided a baseline for monitoring pupil achievement.

The second research question was more open-ended: what are the factors affecting language learning--factors within the classroom such as teacher and pupil characteristics and behaviors as well as factors outside of the classroom such as the influence of parents, community, educational officers, and policy makers? In order for CRIQPEG to tackle the challenge of improving language learning, it was important to identify and understand the factors affecting language learning. To do this, CRIQPEG researchers interviewed Circuit Supervisors, headteachers, teachers, parents, pupils, and community leaders. Input was solicited from Ghanaian educational leaders and policy makers. In addition, CRIQPEG researchers reviewed international literature and conferred regularly with educators from outside of Ghana. Follow-up interviews and discussions continued throughout the project.

The third research question represented the biggest challenge: developing and evaluating a process for improving language learning. Very little time was available for developing or adapting elaborate interventions. Instead, consistent with the IEQ assessment-assimilation-action approach, stakeholders were invited to engage in on-going collaboration focused on improving language learning. To evaluate this process, 14 schools from the Central and Western regions of Ghana were invited to participate in the research. To insure that all schools were comparable in terms of textbook availability, all schools were supplied with textbooks. In addition, stakeholders from 7 of the schools (Intensive Intervention schools) collaborated in all aspects of the assessment-assimilation-action cycles whereas stakeholders in the other 7 schools (Non-intensive/Comparison schools) participated in only the assessment components. Thus all schools received textbooks and participated in periodic assessment/data

collection activities (e.g., achievement testing, interviews, classroom observations) and stakeholders in the 7 Intensive Intervention schools also participated in on-going professional development workshops involving headteachers and circuit supervisors, engaged in on-site collaborative instructional support sessions, and received supplemental instructional materials.

Method

PARTICIPANTS

Fourteen schools in the Central and Western regions of Ghana participated in the research. Schools were selected to represent variety in location (urban/semi-urban/rural), size (large/medium/small), and prior affiliation (Christian/Moslem/secular). In addition, two of the participating schools were part of the PREP Equity Improvement Program. In each school, one classroom per grade level was identified for inclusion in the research sample. The Circuit Supervisor, headteacher, PTA chairperson, and selected parents also participated in research/assessment activities. While it was typical for all teachers in the Intensive Intervention schools to participate in on-site professional development sessions, only the teachers in participating classrooms were targeted for assessment and individual collaboration activities.

At the beginning of Phase II, class rosters were obtained from each participating classroom. Teachers were asked to rate the language skills of all pupils on their roster. A longitudinal sample was selected drawing 25 pupils from classrooms in the Intensive Intervention schools and 15 pupils from classrooms in Non-intensive Intervention schools. Baseline achievement data were obtained by assessing all pupils in the longitudinal sample (n=1039). At the time of follow-up achievement assessment (18 months later), approximately 80% of the pupils in the original sample were re-assessed. In addition, replacements were identified using the original rosters and teacher ratings, whenever possible replacing “missing” pupils with comparably rated pupils. Relatively high and low performing boys and girls in each classroom (and alternates) were identified for observation using baseline achievement data. A final follow-up assessment was conducted one year later. Due to time and budget constraints, only pupils in grade level 6 were assessed (these were students who had been in level 4 at the time of baseline assessment); 83% of those pupils who were tested at the first follow-up were located and reassessed.

INSTRUMENTS

Throughout the Phase II investigation, data collection was guided by the 3 research questions. Instruments were adapted, developed, or revised as needed. When additional questions arose or clarification of findings was needed, relevant questions were appended to interview protocols, and, in

Table 1: Summary of Data Collected in Phase II of IEQ-Ghana Research

	Purpose	Who and How Many	When
Achievement testing in oral language, reading, and writing (Curriculum-based Assessment)	Monitor Pupil Achievement (Longitudinal)	Pupils Baseline (grades 2-5) (n=1032) 18 Months (grades 3-6) Longitudinal (n=812) Follow-up (grade 6 only) Longitudinal (n=212)	Winter 94 Summer 95 Summer 96
Teacher Ratings	Teacher estimates of pupil skill levels	All pupils in class	Baseline Winter 94 Follow-up Summer 96
Classroom and Pupil Observations	Monitor instructional practices and pupil behaviors	Classrooms (n=54) Hi and Low performing boys and girls	Winter 94 (preliminary) Summer 94 Winter 94/95 Summer 95
Interviews	Pursue factors affecting language learning.	Circuit Supervisors (n=14) Headteachers (n=14) Teachers (n=56)	Baseline-Winter 94 18 months-Summer 95 Follow up-Summer 96
	Pursue factors affecting language learning.	Hi performing girls (n=56) Hi performing boys (n=56) Lo performing girls (n=56) Lo performing boys (n=56) Parents (n=200+)	Baseline-Winter 94 18 months-Summer 95
	Case Studies	Pupil Profiles (n=12) Additional interviews with parents and pupils	Summer 96
	Home English Home Education	Grade 6 pupils (n=222)	Summer 96
	Pupil Attendance	Pupils-self ratings Teachers ratings	Summer 96
Textbook Inventory & Distribution log	Monitor textbook availability, supply, and consumption	Initial tally of available books Follow-up count and rating of textbook condition	Winter 94 Summer 96

some instances, substudies were conducted. For example, textbooks were a core component of PREP and of the IEQ investigation. One substudy used data from Phase II to follow-up on what happened to the textbooks (Harris, Okyere, Mensah, & Kugbey, 1997). Another substudy used case study techniques to explore in greater depth the home and school experience of urban and rural girls and boys (Cahalan, Wilmot, & Asamoah, 1997). A third substudy evaluated the readability of selected passages from Ghanaian textbooks and related readability indices to actual pupil performance (Kazas & Harris, 1996). Table 1 provides an overview of the Phase II data collection activities. Described below are the instruments used specifically to address the original 3 research questions.

ACHIEVEMENT TESTING: CURRICULUM-BASED ASSESSMENT:

In order to assess pupils skill levels, curriculum-based assessment instruments were developed for grades 2-6 in oral language (functional expressions, listening comprehension and speaking), reading (pre-reading, decoding, and comprehension), and writing (copying, writing words, dictation, and written expression). Questions were developed, pilot tested, and three parallel forms were created for grade levels 2-6. For in-depth information on the development and use of the assessment instruments, see Harris, Okyere, Pasiona, & Schubert (1997). Table 2 provides a brief description of the instruments, sample questions, and sample interpretations of the scores.

TEACHER RATINGS:

At the beginning of the investigation (Winter 94) and again near the completion (Summer 96), teachers were asked to rate the language proficiency of pupils in their classes with regard to oral language, reading, and writing skills. A copy of the guidelines is provided in Appendix A. In addition, teachers were asked to rate the attendance of each child in their class. Teachers also provided helpful information about what happened to children from the longitudinal sample who were no longer attending the school.

CLASSROOM OBSERVATIONS:

At the beginning of Phase II, researchers visited participating classrooms and observed English instruction using a checklist to identify instructional strategies and to describe pupil behaviors and skills. Following the baseline data collection and the formation of instructional goals, a revised, mostly open-ended classroom observation form was developed focusing on the pupils' exposure to print, teacher and pupil language usage, and the instructional strategies and adaptations used by the teacher.

PUPIL OBSERVATIONS:

Relatively high and low performing boys and girls from participating classrooms were observed as well. At five minute intervals, observers noted the instructional context for each of the observed children (e.g., whole class/teacher directed, small group/teacher not present, etc.) as well as noting each pupil's exposure to and use of instructional materials (textbooks, instructional aids, etc.) and language (use of English and/or Ghanaian by teacher, the observed individual, other individuals, and/or choral). Steps were taken to establish and monitor inter-observer reliability (Pasiona & Harris, June 1994; Okyere, etal. 1995).

Classroom Observations (using the revised form) and Pupil Observations were conducted in July 1994, December 1994 and July 1995. Each participating classroom was observed for several English lessons during each of the three observation periods.

Table 2. Curriculum-Based Assessment Instruments Used in Ghana

TASK	LEVELS	WHAT IT MEASURES	SAMPLE QUESTIONS	SCORING	SAMPLE WAYS SCORES CAN BE INTERPRETED
ORAL LANGUAGE					
Oral -Functional Language	P2-P6	Proficiency with everyday functional oral English	"What's your name?" "How old are you?" "What is the name of your school?"	Extra credit for complete answers.	When children are questioned using everyday English, 30% of the children respond correctly to most of the questions.
Listening Comp: P2-P6	P2-P6	Following oral directions. Comprehension of oral English. Drawn from English syllabus.	"Push the table." "Open to page 13 and point to the monkey."	% Correct	When P6 children are questioned using oral English associated with the syllabus for each level, 60% respond correctly to P2 questions but only 20% of the children respond correctly to P6 questions.
Listening Comp: P6 Passage	P6	Understanding a passage from the textbook that is read to the pupil.	Comprehension questions based on the passage, e.g., "What did Dede find out?"	% Correct	When a passage from the P6 textbook is read to the child, she demonstrates that she understood by responding correctly to more than 75% of the comprehension questions.
Oral Expression: P2-P6	P2-P6	Speaking English appropriately in response to questions drawn from the English syllabus.	"Name 2 things we use water for in the house?" "Who are pounding nuts in this picture?"	Extra credit for complete answers.	Although 40% of the level 6 pupils were able to demonstrate understanding of oral English, far fewer pupils were able to demonstrate competence in speaking English.
PRE-READING/READING					
Concepts about Print*	P2-P6	Hands-on exposure to print.	Questions asked in English and vernacular, e.g., "Turn to page 5."	# Correct	By level 5, all but a few of the pupils demonstrated mastery of basic skills associated with using printed materials such as finding a page or turning to a specific unit.
Letter/Sound Recognition	P2-P6	Alphabet recognition/discrimination	Upper and Lower case letters	# Correct	While very few of the level 2 pupils recognized a majority of printed letters, by level 5 his skill was mastered by most of the pupils.
Aided Reading	P2-P6	Pointing to words that are read.	same as below	% Correct	There were 20% of the pupils who couldn't pronounce the words but they were able to locate the words when the words were read aloud.
Reading Most Used Words	P2-P6	Reading of most commonly used words in the P2-P6 textbooks	Word lists with words such as and, the, for, one, they, etc.	% Correct	75% of the pupils demonstrated that they were able to read all or almost all of the most commonly used words in their textbook.

TASK	LEVELS	WHAT IT MEASURES	SAMPLE QUESTIONS	SCORING	SAMPLE WAYS SCORES CAN BE INTERPRETED
Reading Passage from Textbook	P2-P6	Decoding accuracy	Passages selected from P2-P6 textbooks	Words % Correct	For 25% of the pupils in this classroom, the passage is too difficult and consequently pupils will become frustrated and the learning will be inefficient.
		Decoding speed	Speed in first minute of reading the above passages	Words/Minute	Pupils in level 3 average about 18 words per minute whereas level 6 pupils are able to average about 42 words per minute.
Passage Comprehension	P2-P6	Reading Comprehension	Questions based on the above passages	% Correct	Reading quickly and accurately was associated with reading comprehension. Pupils who read slowly also had more difficulty with the comprehension questions.
WRITING					
Copying Letters	P2-P6	Copying letters using a pencil and paper	Pupil is asked in vernacular to copy his/her name.	Pass/Fail	About 3/4 of all level 2 pupils could copy letters. By level 3, more than 9 out of every 10 children were able to copy letters.
Writing Name	P2-P6	Writing name correctly without help	Pupil is asked in vernacular to write his/her name.	Pass/Fail	By level 6, all pupils could write their names without assistance.
Writing Words	P2-P6	Writing vocabulary	Pupils are asked to write as many words as they can within 10 minutes.	# of correctly spelled words	Most pupils in level 2 and 3 experienced difficulty writing more than a few words whereas by level 6 most pupils wrote more than 10 words or more.
Spelling	P4-P6	Approximate spelling of commonly used word	Words taken from most commonly used words in English textbooks.	Letters % correct (must be in correct sequence)	While only 20% of level 4 pupils spelled most of the words correctly, about 40% of the pupils were able to approximate the spelling by identifying most of the correct letters in these words.
		Spelling of commonly used words	same as above	Words % correct	By level 6, 40% of the pupils were able to spell correctly (with at least 75% accuracy) the most commonly used words in their textbooks.
Dictation	P4-P6	Writing words that are dictated	Dictated sentences from the P2-P4 English textbooks.	Words % correct	When sentences from the P2-P4 textbooks are dictated, pupils are able to spell 30 % of the words correctly.

TASK	LEVELS	WHAT IT MEASURES	SAMPLE QUESTIONS	SCORING	SAMPLE WAYS SCORES CAN BE INTERPRETED
		Correct use of capital letters	same as above	Capital Letters % Correct	On the average, pupils correctly capitalized about half of the letters that should have been in upper case.
		Correct spelling, punctuation, etc.	same as above	Correct Writing Sequences % Correct	When sentences from the P2-P4 textbooks are dictated and spelling, punctuation, and capitals are considered, pupils in the intervention schools performed significantly better than pupils in the comparison schools.
Writing Story	P6	Fluency in written expression	pupils are given a topic from English syllabus and asked to write story.	Words produced - # (spelling not considered)	When asked to write a story, Akua wrote 125 words.
		Words spelled correctly in written expression	Ex: Most children in Ghana know Anansi stories. Write an Anansi story or some other kind of story.	Words Spelled Correctly (#)	Of the 125 words that Akua wrote, 119 (95%) were spelled correctly.
		Correct word use (syntax and semantics), spelling, punctuation, etc. in written expression	same as above	Correct Writing Sequences (#)	When word use, spelling, punctuation, and capitalization are considered, Akua was able to produce 70 correctly written sequences.
Writing Letter	P6	Fluency in written expression	Pupils are given a topic from English syllabus and asked to write a letter.	Words Produced - # (spelling not considered)	The median number of words produced by level 6 pupils who were asked to write a letter was 38. Some pupils were not able to express any written words whereas the longest letter contained 182 words
		Words spelled correctly in written expression	Ex: Imagine a friend gave you a gift. Write a letter to the friend thanking the friend for the gift. Include something you like about the gift.	Words Spelled Correctly (#)	The average number of correctly spelled word sin letters written by level 6 pupils was 34.
		Correct spelling, punctuation, etc.	same as above	Correct Writing Sequences (#)	When correct word use, spelling, and punctuation are considered, the average number of correctly written sequences in the intervention schools was 27 whereas the average in comparison schools was 21.

INTERVIEWS:

Semi-structured interviews were conducted periodically throughout Phase II in order to understand and clarify factors affecting language learning. Circuit Supervisors, and headteachers were asked about their administrative approach. For example, they were asked questions about their roles in the CRIQPEG school (Circuit Supervisors were asked about the other schools they oversee as well), their perceptions regarding changes in the schools, how they assess and monitor teacher performance, how they provide instructional support, and so on. Teachers were asked to describe the instructional process and strategies they use, and, if they modified their approach, to describe the changes. Parents, pupils, and community leaders were asked to provide input on factors affecting the children's learning and to describe any changes they noticed. All interviewees were asked for their suggestions on improving language learning.

OTHER MEASURES:

In order to obtain information about the family background of children in the participating classrooms, all grade 6 pupils were asked about the educational background and English proficiency levels of people in their households. Teachers were consulted when children were uncertain. While these data are likely to be somewhat imprecise, errors should be randomly distributed across Intensive and Non-intensive schools and these data provide a rough estimate of "out of school" support for learning. In addition, pupils were asked to rate their attendance.

INTERVENTIONS

"Interventions" in Ghana refers to a process rather than a pre-packaged program. The IEQ process of assessment--assimilation--action provided the framework for improvement. CRIQPEG began by assessing: soliciting broad reaching stakeholder reflection and input, observing classrooms and instruction, and measuring pupil skills. Findings were then shared with stakeholders in a spirit of mutual concern--avoiding assigning blame and defensiveness--focusing on, "Do these findings reflect your understandings?" and "What insights do they provide that can guide our efforts at improvement?" This assimilation process resulted in 3 instructional goals (i.e., Increasing oral language practice; Increasing exposure to print; and Teaching to make every pupil a successful learner) that became the focus of subsequent professional development seminars and workshops. International consultants shared successful strategies and materials from other countries and local educators shared their own strategies, materials, and adaptations. Teams composed of researchers, the local Circuit Supervisor, and the headteacher then led school level workshops--again starting with assessment findings and reflections and then followed by assimilation activities and planning of strategies for action.

Table 3. Overview of Intervention Activities for Intensive Intervention and Comparison Schools

	Intensive Intervention Schools	Comparison/Non-intensive Intervention Schools
Instructional Materials	Supply of English and Mathematics textbooks for 1:1 ratio in most classrooms; Periodic re-supply	Supply of English and Mathematics textbooks for 1:1 ratio in most classrooms; Periodic re-supply
	Supplementary materials such as labels, puppets, sample instructional posters, sample flash cards	
Assessment/ Data Collection Activities	Interviews provided opportunities for reflection on the instructional process and factors affecting language learning. Involved administrators, teachers, community, and pupils.	Interviews provided opportunities for reflection on the instructional process and factors affecting language learning. Involved administrators, teachers, community, and pupils.
	Pupil Assessment and Teacher Ratings of pupil skill level offered teachers and pupils opportunities to consider pupil assessment and learning.	Pupil Assessment and Teacher Ratings of pupil skill level offered teachers and pupils opportunities to consider pupil assessment and learning.
	Classroom and pupil (high and low achieving boys and girls) observations heightened teachers' awareness of instructional process.	Classroom and pupil (high and low achieving girls and boys) observations heightened teachers' awareness of instructional process.
Professional Development	Circuit Supervisors, Headteachers, and CRIQPEG participated in professional development seminars focusing on strategies for (1) increasing oral practice, (2) increasing exposure to print, and (3) teaching to make every pupil a successful learner. Follow-up seminars focused on managing a multi-ability classroom.	
	Circuit Supervisors, Headteachers, and CRIQPEG led on-site workshops for teachers (6/94, 11/94)	
On-going Instructional Support	Headteachers and CRIQPEG observed classrooms and provided support for teachers.	
Collaboration	Circuit Supervisors, Headteachers, and teachers participated in periodic feedback sessions providing insights on improving instruction.	

Over the next year, the cycle continued as researchers and headteachers visited classrooms (assessment) and collaborated with teachers on their experiences (assimilation and action). Input and feedback sessions at the school level and at UCC kept the stakeholders engaged in the cycles of improvement. As CRIQPEG schools visits decreased, Circuit Supervisors and headteachers were encouraged to continue providing instructional leadership. (Table 3 provides an overview of intervention activities.)

ANALYSES

Analyses drew from interviews in 1995 and 1996 with Circuit Supervisors, headteachers, teachers, parents, and pupils in the 14 schools, observations of classrooms and high and low performing pupils, and longitudinal assessment of individual pupil performance. Using these data--looking for patterns, following up, triangulating, reviewing archival data, and identifying trends--it was possible to describe pupils skills in meaningful terms, describe factors affecting language learning, and evaluate the success of IEQ efforts at improving language learning.

Overall Findings

RESEARCH QUESTION 1: WHAT ARE THE CURRENT LANGUAGE SKILLS OF GHANAIAN PRIMARY SCHOOL CHILDREN?

FINDING: Baseline achievement results confirmed fears that most children's skills were far below the expectations detailed in the Ghanaian syllabi. On the bright side, there were signs that many children were developing prerequisite language skills.

Pupil, classroom, and school profiles were developed using baseline curriculum-based assessment results. Table 4 provides an example of the descriptive information that was derived using these results. As is evident, most children had mastered some beginning language and/or literacy skills but their skills were not sufficient to use the available textbooks efficiently. When these findings were shared with local educators, they were not surprised--they knew there were serious gaps in children's learning. However, because results identified and profiled skill mastery, educators felt encouraged because now they had useful diagnostic information to guide their change efforts. For example, there was consensus that children at all grade levels needed more opportunities to practice speaking English--that this practice would build vocabulary and enhance oral and written comprehension. Also, in every grade level there were children struggling with beginning reading who needed concentrated help with reading prerequisites. Educators grappled with the difficulties and dilemmas of balancing the needs of these pre-literate pupils against the curricular expectations for the grade level. At subsequent

Table 4. Pupil Profiles derived from 1994 Baseline Data Collection

Grade Level	Oral Language	Reading	Writing
Primary Grade 2 (P2) (n=261)	<p>The typical pupil in grade 2 is able to respond correctly to very basic questions like “What is your name?” and “How old are you?” (Functional English)</p> <p>The typical pupil is able to follow a few simple oral directions spoken in English.</p> <p>The typical pupil is unable to communicate in simple conversational English or respond to simple oral questions using words and pictures from the P2 Pupils English textbook.</p>	<p>The typical pupil recognizes some of the letters of the alphabet but can name less than half of the upper and lower case letters.</p> <p>The typical pupil shows some familiarity with printed material (for example, responds correctly when asked in the vernacular to show the front of a P2 textbook) but is unable to point to where to begin reading or to follow along as someone else reads.</p> <p>With rare exceptions, grade 2 pupils are unable to recognize or read the words in grade 2 English text.</p>	<p>Most grade 2 pupils could copy letters in the alphabet.</p> <p>About half other pupils could write their names. About half could not write their names or any other words.</p> <p>About ¼ of the pupils could write 6 or more words.</p>
Primary Grade 3 (P3) (n=259)	<p>The typical pupil in grade 3 is able to respond correctly to very basic questions like “What is your name?” and “How old are you?”</p> <p>The typical pupil performs slightly better than the grade 2 pupil in listening comprehension (i.e., following simple oral directions spoken in English).</p> <p>The typical pupil is unable to communicate in simple conversational English or respond to simpler oral questions using words and pictures from the P3 Pupils English textbook.</p>	<p>The typical pupil is able to recognize most or all of the letters of the alphabet.</p> <p>Most of the pupils show some familiarity with printed materials and over half show signs of beginning literacy.</p> <p>While most pupils can’t recognize or read the most commonly used words in their textbooks, about 1/3 have at least some success at this task.</p> <p>With rare exceptions, pupils can’t read or comprehend passages taken from the English textbooks for grades 2 and 3.</p>	<p>The typical pupil can copy letters and write his/her name without mistakes.</p> <p>Some of the pupils cannot yet write their names without help (about ¼).</p> <p>Most pupils are unable to write more than 5 words.</p>

Grade Level	Oral Language	Reading	Writing
<p>Primary Grade 4 (P4)</p> <p>(n=265)</p>	<p>The pupil responds more readily than P2 and P3 pupils to the standard identification questions. (Functional English)</p> <p>Listening comprehension skills are comparable to those of younger pupils with the typical grade 4 pupil experiencing difficulties responding to oral directions involving grade 4 materials.</p>	<p>Most pupils demonstrate familiarity with printed materials.</p> <p>The typical pupil is unable to read many of the most frequently used words in the grade 4 textbook.</p> <p>They typical pupil cannot read passages from the English textbooks for grades 2-4.</p> <p>Even those children who experience success in reading the passages (about 1/5 of the pupils) have difficulties comprehending what they read.</p>	<p>Everyone can copy letters and the great majority (80%) can write their names without t assistance.</p> <p>The typical pupil can write more than 5 words but has difficulty writing more than 15 words.</p>
<p>Primary Grade 5 (P5)</p> <p>(n=254)</p>	<p>The grade 5 pupil can satisfactorily answer most of the standard identification questions and comprehends simple oral instructions such as “Sit down,” “Stand up,” and “Walk to the door,” but is unable to respond correctly to approximately half of the listening comprehension tasks and oral directions requiring the sue of vocabulary and pictures found in the textbooks.</p> <p>The pupil cannot express himself/herself in English—oftentimes responding in the local language to questions asked in English</p>	<p>Children at this level demonstrate familiarity with using printed materials.</p> <p>They can read many but not all of the most frequently used words in their texts.</p> <p>The typical pupil is able to read (decode) about half of the words in passages taken from P2-P5 textbooks.</p> <p>Reading comprehension continues to lag behind with only a small percentage of pupils comprehending what they read.</p>	<p>With rare exceptions, everyone can write their names unassisted.</p> <p>Most pupils can write more than 5 words and almost half can write more than 15 words.</p>

Table 5. Summary of Baseline ANOVA results for achievement measures for Overall Sample (Intensity x Grade Level)

	Overall--Baseline		Level 2	Level 3	Level 4	Level 5
Functional Lang.	C>I		C>I	NS	NS	NS
Listening Comp	C>I		C>I	C>I	NS	NS
Oral Expression	I>C + Intens X Lvl		I>C	I>C	NS	NS
Copy Letters	C>I		C>I	C>I	NS	NS
Write Name	I>C		I>C	NS	NS	NS
Write Words	NS		--	--	--	--
Concepts-Print	Intens X Lvl		NS	I>C	NS	C>I
Letters/Sounds	NS		--	--	--	--
Aided Reading	NS		--	--	--	--
Most Used Words	NS		--	--	--	--
TRD-1 Minute	I>C		NS	NS	NS	I>C
TRD-% Whole	NS		--	--	--	--
TRD-Comprehension.	NS		--	--	--	--
Read P2/minute	I>C		NS	NS	NS	I>C
Read P2 %	NS		--	--	--	--
P2 Read Comp	NS		--	--	--	--
Read P3/minute	I>C			NS	NS	I>C
Read P3 %	I>C			NS	NS	I>C
P3 Read Comp	NS			--	--	--
Read P4/minute	I>C				NS	I>C
Read P4 %	NS				--	--
P4 Read Comp	NS				--	--
Read P5/minute						I>C
Read P5 %						I>C
P5 Read Comp						NS

NS indicates that the differences in average performance were not significant at the .05 level.

I>C indicates a significant difference ($p < .05$) with pupil performance in Intensive schools greater than pupil performance in the Comparison (Non-intensive) schools.

C>I indicates a significant difference ($p < .05$) with pupil performance in the Comparison schools greater than pupil performance in the Intensive schools.

TRD 1 Minute, TRD % Whole, and TRD Comprehension are composite variables combining performance from multiple passages.

workshops, these baseline assessment findings served as the basis for intervention discussions and development.

RESEARCH QUESTION (2) WHAT ARE THE FACTORS AFFECTING LANGUAGE LEARNING? AND

RESEARCH QUESTION (3) HOW CAN LANGUAGE LEARNING BE IMPROVED?

FINDING: With a few exceptions, pupil performance in Intensive and Non-Intensive Intervention schools was comparable at baseline.

Using the baseline data, analyses of variance were computed to determine whether there were significant differences between the Intensive and Non-intensive schools prior to the implementation of the interventions. Table 5 provides a summary of the results of these analyses. In grade levels 2, 3, and 4, most comparisons were non-significant and the few significant differences were equally distributed such that half indicated a significant difference favoring the Intensive schools and half indicated a significant difference favoring the Non-intensive or comparison schools. At grade 5, there were 15 non-significant comparisons (excluding composite scores), one significant comparison favoring the Non-intensive schools, and six significant comparisons favoring the Intensive schools. Significant differences favoring the Intensive schools were associated with reading passages and indicated that grade 5 pupils in the Intensive schools were able to read more words per minute than grade 5 pupils in the Non-intensive schools. Also, in two of the four reading passages, grade 5 pupils in the Intensive schools read correctly a greater percentage of the words than did grade 5 pupils in the Non-intensive schools. There were no significant differences with regard to reading comprehension on any of the passages. It should be noted that with this large number of statistical tests, it is expected that a small number of significant findings are likely to be spurious. Thus, for all practical purposes, it appears that baseline achievement of pupils in Intensive and Non-intensive schools in grade levels 2, 3, and 4 was comparable; in grade level 5, while performance in most areas was comparable, there were some differences in reading decoding favoring pupils in the Intensive schools.

FINDING: Performance of pupils in ALL participating schools improved substantially between baseline and 18 month follow-up. This may be because all 14 schools received textbooks and all 14 schools participated in exploring factors affecting language learning.

Circuit Supervisors, headteachers, teachers, parents and pupils from all 14 schools participated in investigating factors affecting language learning. Researchers recorded what these stakeholders had to say and they observed in classrooms to see for themselves what was happening during instructional time. Also, for two consecutive years, pupils in grade levels 3-5 were tested--the first year they were tested in February, the second year they were tested in July. Table 6 compares the baseline skill profiles for each grade level with their grade level counterparts the subsequent year (e.g., 3rd grades in 1994 are compared with 3rd grades in 1995). Clearly, in the second year, pupils outperformed their grade level counterparts from the previous year. Admittedly, testing in 1995 occurred later in the school year than the 1994 baseline testing. However, these few extra months do not fully explain the superior performance in 1995. For example, grade 3 performance in 1995 exceeded the baseline performance of pupils in grades 3 and 4, and, in some skill areas, pupils in grade 5. Similarly, grade 4 pupils in 1995 exceeded the baseline performance of pupils in grades 4 and 5. These profiles provide concrete evidence that children in participating schools made significant academic growth during the IEQ project.

Table 6. Pupil Skill Profiles by Grade Level at Baseline and Follow-up 1 1/2 Years Later.

	Baseline (February 1994)	1 1/2 Years Later (July 1995)
What could grade level 3 pupils do?	59% of level 3 pupils could write their names	80% of level 3 pupils could write their names
	On the average, they could write about 7 words--but 27% couldn't write any words.	On the average, level 3 pupils could write about 15 words
	Textbook passages were at an appropriate instructional level for decoding by about 1 out of every 10 pupils.	Textbook passages were at an appropriate instructional level for decoding by about 1 out of every 3 pupils.
	Textbook passages were too difficult to comprehend for all but the top 3%.	Textbook passages were too difficult to comprehend for all but the top 10%.
What could grade level 4 pupils do?	77% of level 4 pupils could write their names	93% of level 4 pupils could write their names
	On the average, they could write about 10 words--but 9% couldn't write any words.	On the average, level 4 pupils could write about 23 words
	Textbook passages were at an appropriate instructional level for decoding by about 1 out of every 6 pupils.	Textbook passages were at an appropriate instructional level for decoding by about 1 out of every 2 pupils.
	Textbook passages were too difficult to comprehend for all but the top 6%.	Textbook passages were too difficult to comprehend for all but the top 18%.
What could grade level 5 pupils do?	95% of the level 5 pupils could write their names	96% of the level 5 pupils could write their names
	On the average, they could write about 16 words--but 4% couldn't write any words.	On the average, level 5 pupils could write about 29 words
	Textbook passages were at an appropriate instructional level for decoding by about 1 out of every 3-4 pupils.	Textbook passages were at an appropriate instructional level for decoding by about 1 out of every 2 pupils.
	Textbook passages were too difficult to comprehend for all but the top 6%.	Textbook passages were too difficult to comprehend for all but the top 18%.

Note: Assessment followed a longitudinal sample, beginning in 1994 with pupils in grades 2-5. These same pupils were reassessed in 1995 when they were in grades 3-6. Thus, grade level 3 pupils who were assessed in 1994 are the same pupils who were reassessed in grade level 4 in 1995, and so on. Also, no 6th graders were tested in the baseline sample and no new 2nd grades were tested in 1995--hence profiles for 2nd and 6th grade levels are not included in this comparison.

FINDING: School leadership played an important part in the improvement process.

Evidence from interviews supports significant changes in the roles of participating Circuit Supervisors and Headteachers in Intensive and Non-intensive schools. Educators described changes in themselves and their practices. Parents and community members frequently noted observable differences in school leadership and supervision. Often they thanked CRIQPEG for improvements.

Even though the CRIQPEG research and assessment results were not shared formally with educators in the Non-intensive schools, Circuit Supervisors and Headteachers from Non-intensive schools expressed a renewed emphasis on instructional practices and talked about ways they were working with

teachers so that, “The children’s performance will be better next time.” More frequent visits and inspections of exercise books were common examples of how they had changed. One Non-intensive Circuit Supervisor reported benefits from just sitting in with the researchers/observers: “I have improved upon my observation techniques, especially how to observe individual pupils to identify their problems in order to help them.” Another Circuit Supervisor commented, “[Attendance for the B shift involved in CRIQPEG exercises has improved because] ...effective supervisory machinery has been set in place....too, the headteacher has intensified his supervisory role.”

One difference between the Intensive and Non-intensive schools was in how the Circuit Supervisors and Headteachers described their work with teachers. Typically Intensive school educators talked about supporting the strategies that came out of the IEQ workshops--observing lessons, teaching model lessons, talking with teachers as “friends” to get them to open up about the difficulties they were having. Headteachers in Intensive schools reported observing teachers more often (about 3-4 times per month) as compared with headteachers in Non-intensive schools who reported observing teachers about 1-2 times per month. Circuit Supervisors talked about using what they learned in all schools but intensifying their efforts in the CRIQPEG intervention schools.

FINDINGS: Classroom observations indicated that there were observable changes in instructional practices used in all participating classrooms during the course of the project.

All classrooms changed from Spring 1994, not just those in the Intensive intervention schools. In some classrooms the changes were dramatic, in other classrooms changes were less apparent--perhaps only reflected in the distribution of textbooks or the teacher’s self report of instructional practices. In general, there was greater use of printed materials and exposure to print in the classrooms. For example, 1995 follow-up classroom observations documented that children had access to textbooks during English lessons about 45% of the observed time (up from 18%) and children used the textbooks during instruction about 30% (35% in the Intensive schools and 25% in the non-intensive schools) of the observed time (up from 15%). In addition, there was greater use of English during English lessons by both teachers and pupils. At the time of baseline data collection, teachers spoke English approximately 90% of the observed intervals and pupils spoke English during approximately 56% of the observed intervals. During the 1995 follow-up observations, teachers in Intensive schools spoke English during English instruction in 98% of the observed intervals as compared with no perceptible change (still about 90%) in the Non-intensive school classrooms. Pupils in Intensive schools spoke English 93% of the observed intervals, pupils in Non-intensive spoke English 83% of the observed intervals.

Finding: Based on observations and interviews, it seems likely that improvement was due in part to the increased emphasis on the teaching and learning of language in all 14 schools.

Circuit Supervisors and teachers in all schools commented on how much they had learned from the interviews and assessment activities. With each successive interview, teachers were better able to articulate their strategies for instruction. Interviews indicated that teachers had begun incorporating textbooks and assessment activities into daily lessons. Pupils who were interviewed gave detailed examples of how the teacher helped them to practice oral English. A Circuit Supervisor commented, "Every teacher is putting in the best of his or her time to improve the quality of children's education so that they can score better in the assessment instruments."

FINDING: With rare exceptions, pupil performance in Intensive Intervention schools was significantly better than pupil performance in Non-Intensive Intervention schools at 1 and 2 years following the initial intervention efforts.

Table 7 provides the results from analyses of variance comparing pupil performance results from Intensive and Non-intensive schools at baseline (Winter 1994), 1 year after baseline results were shared with educators in Intensive Schools (Summer 1995), and 2 years after results were shared (Summer 1996). These analyses report findings based on the longitudinal data set (only those pupils who had been tested at baseline were included). Analyses completed on pupils who were no longer attending the participating school at the time of the follow-up assessments failed to identify any patterns differentiating Intensive and Non-intensive schools with regard to pupils dropping out or transferring to other schools. Due to resource limitation, only grade 6 pupils were reassessed in Summer 1996.

As is evident from Table 7, children in the Intensive Intervention schools made significantly more academic growth than children in the Non-intensive schools--that is, although children in all 14 participating schools make substantial improvement, the improvement of children in the Intensive schools was significantly greater than the improvement of children in the Non-Intensive schools. This was true for skills associated with oral language, reading, and writing. The only area for which this was not true was expressive writing. This skill was not measured a part of baseline assessment. At follow-ups, only 6th grade pupils were asked to provide samples of their expressive writing (e.g., write letters, stories, etc.). Most of the grade level 6 pupils--regardless of whether they attended Intensive or Non-intensive intervention schools--experienced considerable difficulty with this task.

FINDING: Differences in family background do not seem to account for Intensive/Non-intensive achievement differences. If anything, the pupils from Non-intensive schools come from households where there is greater perceived English competency than the pupils from the Intensive schools. Family size is comparable. Education level of household members is comparable.

In July 1996, estimates of household English were gathered for Level 6 pupils. Members in each household were listed and pupils were asked in the vernacular to describe whether each household

Table 7. Summary of ANOVA results for selected achievement measures

	Overall--Baseline Feb. 94 (N=1037)	Overall-- July. 95 (N=785)	Overall-- July 96 (Grade Lvl 6 only N=222)
ORAL LANGUAGE			
Functional Lang.	C>I	I>C	I>C
Listening Comprehension	C>I	I>C	NS
Listening Comp for Passage (Grade Lvl 6 only)	--	NS	I>C
Oral Expression	I>C + Intens x Lvl: I>C Lvls 2&3; NS Lvls 4 &5	I>C	I>C
Total Oral Language	--	I>C	I>C
READING			
Concepts-Print	Intens x Lvl Lvl3 I>C; Lvl5 C>I	NS	NS
Letters/Sounds	NS	I>C	I>C
Aided Reading	NS	I>C	I>C
Most Used Words	NS	I>C	I>C
Words Read Correctly in 1 minute (composite)	I>C	I>C	I>C
Percent of Words Read Correctly (whole passages-composite)	NS	I>C	I>C
Reading Comprehension (composite)	NS	I>C	I>C
WRITING			
Copy Letters	C>I	NS	NS (ceiling)
Write Name	I>C	I>C	NS (ceiling)
Write Words	NS	I>C	I>C
Dictation-% correct letters	--	NS	I>C
Dictation-% correct words	--	I>C	I>C
Dictation-passage (includes spelling, punctuation, etc.)	--	I>C	I>C
Expressive Writing Fluency (Grade 6 only)	--	NS	NS
Expressive Writing Correct (Grade 6 only)	--	NS	NS

NS indicates that the differences in average performance were not significant at the .05 level.

I>C indicates a significant difference (p<.05) with pupil performance in Intensive schools greater than pupil performance in the Comparison (Non-intensive) schools.

C>I indicates a significant difference (p<.05) with pupil performance in the Comparison schools greater than pupil performance in the Intensive schools.

Lvl=Grade level; Intens x Lvl indicates there was a significant interaction.

member could speak, read, or write English. Each member was rated as “No” “Some” or “Yes”. The number of Yes’s for each aspect of language (Speaking, Reading, and Writing) was tallied and pupils in Intensive schools were compared with pupils in the Non-intensive Schools. There were significantly MORE readers of English in the households of Non-Intensive school pupils than there were in the households of Intensive school pupils (significant at the .05 level). [When kind of community was taken into account, all three ratings of English competency favored pupils in Non-Intensive schools however some cell sizes were small and thus more subject to chance variation.]

FINDING: At follow-up, children in the Intensive intervention schools reported significantly better attendance than children in the Non-intensive intervention schools. While there was a strong correlation (.72 for boys and .83 for girls) between the teacher and pupils reporting of pupil attendance, differences between Intensive and Non-intensive school teachers in reporting of pupil attendance were not significant.

In July 1995, children in Intensive schools rated their attendance higher than children in Non-intensive schools. Children in Intensive schools reported attending school an average of 4.26 days a week as compared with children in Non-intensive schools who reported attending 3.88 days per week. Unfortunately, no baseline attendance data are available. Efforts early in the project to gather attendance data from official class records were only marginally successful, frequently yielding unreliable data.

URBAN, SEMI-URBAN AND RURAL SCHOOLS

FINDING: Vast differences exist between the skills of pupils in urban schools and those of pupils in rural schools. While available approaches and materials may be appropriate for urban pupils, alternative models and materials are needed for pupils from rural settings.

Participating schools ranged on a continuum from urban (e.g., located in Takoradi, Cape Coast, etc.) to rural (e.g., located in a rain forest several miles from any passable road). Although all 14 schools were classified as urban (n=3), semi-urban (n=3), or rural (n=8), these labels are somewhat misleading with some schools being more rural or urban than others. Nonetheless, there were distinct differences between the experiences and skills of children in rural and urban schools. Children in urban schools reported much greater exposure to print and more opportunities to hear and practice oral English. Children in rural schools tended to have very limited access to printed materials and school was disrupted often due to bad weather or difficulties with transportation.

It is not surprising that there were dramatic differences in the performance of children from rural and urban schools. Table 8 illustrates some of these differences. Many children in rural schools were still preliterate at the end of the primary cycle whereas this concern was less apparent in the urban schools

Table 8: Pupil Profiles for Urban and Rural Children

	Rural	Urban
Baseline (P2-P5)	53% of rural children could write their names	92% of urban children could write their names
	read aloud 4.6 words in 1 minute	read aloud 20.8 words in 1 minute
	read aloud correctly 17% of textbook passages	read aloud correctly 49% of textbook passages
Follow-up (P3-P6)		
	87% of rural children could write their names	98% of urban children could write their names
	able to write an average of 20 words in 10 minutes	able to write an average of 39 words in 10 minutes
	read aloud 19 words in 1 minute	read aloud 52 words in 1 minute
	read aloud correctly 53% of textbook passages	read aloud correctly 78% of textbook passages
	1.7 out of 8 reading comprehension questions	4.3 out of 8 reading comprehension questions

at follow-up assessments. Clearly the available textbooks are too hard for rural pupils--most grade levels complete only the first units before the end of the school year. In the urban schools most classes completed over half of the units and in one urban school they were likely to finish the books before the end of the term. (For more information, see Harris, Okyere, Mensah, & Kugbey, 1997).

Classroom observations and interviews supported the finding that the instructional process and needs in rural and urban schools were very different. During class, high achieving grade level 6 pupils in urban schools discussed a topic and then wrote about it. Other less advanced pupils in the class were aided in their work by the teacher who wrote relevant vocabulary and phrases on the chalkboard. By contrast, during class in the rural schools, even the relatively high achieving grade level 6 pupils used English that was characteristic of rote choralling and often they pointed to each word as they read it.

GENDER

FINDING: Few gender differences in pupil performance were found although gender differences in pupil enrollment persist.

Overall there were significantly more boys than girls enrolled in the 14 participating schools (1594 girls, 1873 boys). Typically these differences occurred at every grade level although in a few schools

enrollments in lower primary were gender balanced with the unbalanced enrollments occurring in the upper primary grades. It is interesting to note that in 3 of the 14 schools there were approximately equal numbers of boys and girls enrolled at all grade levels. Efforts to explore this finding further led to several hypotheses (e.g., these were the only schools in the sample that had originally been Catholic) that warrant further investigation (Cahalan & Okyere, 1996).

Pupil achievement scores of enrolled boys and girls were similar. Whenever possible, equal numbers of boys and girls from the participating schools were selected to be part of the longitudinal data set. Examination of the assessment results revealed few gender differences in performance on the oral language, reading and writing tasks.

FINDING: Case studies of a small sample of boys and girls suggested that boys receive more home support for education than girls.

While most parents reported that they supported sons and daughters equally, when asked who they would support if they had to choose, oldest boys were given preference. A review of the daily lives of the girls and boys suggested that boys were given more support for extra lessons or homework. These findings are very tentative because they are based on so few cases however they lead to hypotheses for future investigation.

FINDING: Teachers from Intensive schools and Non-intensive schools rate GIRLS attendance as higher than boys.

Fewer girls are enrolled in school but teachers rate the attendance of those who are enrolled as higher than the attendance of enrolled boys. This finding needs further investigation.

FINDING: Consistent with current international thinking, the education level of female guardians was significantly higher for girls than for boys. This may suggest that better educated mothers are sending their daughters to schools whereas mothers' education is less critical in boys' enrollment. Data is only available for grade 6 pupils. This explanation needs further exploration although it is supported in the pupil case studies.

Implications and Future Directions

*CLASSROOM RESEARCH CAN GUIDE AND IMPROVE INNOVATIONS.

IEQ research demonstrates how a national initiative like providing teacher training and textbooks can be improved by conducting classroom research. Understanding whether and how the textbooks are

used and identifying the processes that can be used to enhance their use provides valuable insights to policy makers and donor agencies. CRIQPEG's research findings contributed to changes in national policies regarding textbooks (i.e., money for transport of the books to the schools was provided to make sure that the books actually made it from the district offices to the schools; teachers were informed that they would not be held accountable for normal textbook consumption; expected textbook "life" was reduced from 5 to 3 years to allow for heavier textbook use). Also, CRIQPEG identified effective instructional strategies to improve language learning. These strategies, many of which are listed below, are finding their way into the educational system through the University of Cape Coast and through the Advisory Board.

* CLASSROOM ASSESSMENT IS VALUABLE FOR GARNERING SUPPORT FOR IMPROVEMENT IF IT LEADS TO DATA THAT HAVE MEANING TO THOSE WHO WILL USE IT.

CRIQPEG found that teachers were more willing to believe test information because it was collected on their own pupils. Sharing information about the performance of children in a teacher's classroom and within the school was an important tool for motivating teachers, head teachers, and Circuit Supervisors to become involved in efforts toward improvement. It was crucial for the information to be easily understood and translated into skills that the educators could understand. Abstract scores were less useful than being able to report how many children could write their names, respond to questions such as "What is your name?", and read passages from the textbook. Also, these same kinds of illustrations were important for communicating with policy makers and national leaders.

* STRENGTHENING INSTRUCTIONAL SUPPORT AND LEADERSHIP AT THE SCHOOL LEVEL IS CRUCIAL TO IMPROVEMENT. IEQ LESSONS SHOULD BE TRANSLATED INTO A TRAINING PROCESS AND HANDBOOK FOR CIRCUIT SUPERVISORS AND HEADTEACHERS TO GUIDE THEM IN THE PROCESS OF PROVIDING INSTRUCTIONAL LEADERSHIP.

A crucial component of the IEQ process was providing professional support to the head teachers and Circuit Supervisors that enabled them to provide instructional leadership in their schools. These individuals participated as equal partners with the University researchers in the improving quality process. As a result, many of these individuals provided strong local leadership and support for the change process. Because of the success of this component, future efforts should explore the efficacy of modifying the role of Circuit Supervisors and headteachers from a bureaucratic/evaluative role to one that supports an environment that yields learning outcomes. The proposed training and handbook is in response to a need revealed by CRIQPEG research efforts and implicit in the desire of other districts to implement the IEQ process to improve educational quality. The training and handbook would be designed to guide local administrators from other districts in the use of the IEQ process by taking them through each step and providing them with tools for (1) assessing instructional needs in their schools, (2) sharing these results with the teachers, parents, and community, and (3) guiding decisions regarding how these needs could be met.

* BUILDING ASSESSMENT INTO THE INSTRUCTIONAL PROCESS.

Curriculum-based assessment instruments formed the backbone of IEQ1 in Ghana. These instruments and techniques provide a foundation for integrating assessment into the instructional process and developing a system of continuous assessment in Ghana. Current national reform efforts call for building assessment into the instructional process. CRIQPEG's research and tools have credibility in the country and their use should facilitate this reform process.

* CURRICULUM REFORM-STRENGTHENING THE LINKAGES BETWEEN CRIQPEG RESEARCH AND THOSE IN THE MOE RESPONSIBLE FOR CURRICULUM DEVELOPMENT.

Efforts to collect data that can guide the development of instructional materials tailored to the needs of pupils with different circumstances, attributes, and needs should continue. Included in all curriculum materials should be tools and strategies for continuous assessment. This will facilitate on-going monitoring and evaluation.

* HOLDING A NATIONAL CONFERENCE TO BUILD CONSENSUS AND GENERATE A RESEARCH AGENDA TO FOLLOW-UP THE FINDINGS OF IEQ1 THAT THERE ARE VAST DIFFERENCES BETWEEN RURAL AND URBAN SCHOOLS AND THAT THE AVAILABLE INSTRUCTIONAL MATERIALS (TEXTBOOKS) ARE NOT SUITABLE FOR MOST RURAL BOYS AND GIRLS.

For example, IEQ1 found that at the end of the school year, pupils in rural schools were still struggling with the beginning units in the texts (they had spent the entire year working on materials that were too hard) and pupils in urban schools who had experienced regular in- and out-of-school exposure to spoken and printed English were finishing the textbook with ease. Relying on identical instructional materials in both settings was inefficient--providing discouragement for pupils and teachers in rural schools and insufficiently stimulating for pupils and teachers in urban schools. This action item emerged from the January 1997 IEQ Exchange. It is consistent with the national reform objectives of trying to link curriculum, learning materials, teacher preparation and instruction with the needs of the learner.

* FUTURE CBA EFFORTS MAY WANT TO ASSESS ORAL PROFICIENCY IN THE LOCAL VERNACULAR AS A READINESS SKILL FOR ORAL ENGLISH.

CRIQPEG didn't address the issue of language learning in the mother tongue. Pre-requisite to language learning in a foreign language, is adequate language development in one's mother tongue. While CRIQPEG encouraged active interaction between teachers and pupils (including encouraging lower primary teachers to converse with pupils in Ghanaian and English), the CBA instruments did not assess pupil language readiness skills in the mother tongue. There were political and practical reasons for this decision. Politically, the policy makers and researchers felt strongly that the focus should be on English. From a practical standpoint, in many instances, the teachers in Ghana are not fluent in the local mother tongue (e.g., only 43% of the teachers in participating IEQ schools reported

that they were fluent in the local language). Further, it was typical in the IEQ schools for there to be children with different mother tongues and the few written Ghanaian languages often don't match the local languages or dialects. Nonetheless, it may be useful in future CBA efforts to assess pupil oral language proficiency in the mother tongue as a readiness skill for oral language learning in English. Also, in instances in which the local Ghanaian language has been transcribed, investigating the utility of developing reading proficiency in the mother tongue as a prerequisite or facilitative factor in developing English reading skills should be considered.

* INVESTIGATING THE OPTIONS FOR DEVELOPING LITERACY IN LOCAL LANGUAGES AND NATIONAL LANGUAGES.

In Africa, most of Latin America, and Asia--wherever mother tongue is different from national language-- there is a need for validated tools for guiding instructional decisions including assessing proficiency in local language--whatever is used in lower primary--as well as national language. Research in Ghana provides insight into the differences between urban and rural classrooms and the very different needs of children who are learning English as a second language (as in urban areas where it is commonly used) and children in rural areas who are learning it as a foreign language. Developing tools for decision-making regarding children's language readiness when they enter school (proficiency in local languages) and later as shifts are made to second or foreign languages would serve Ghana and make a significant contribution into international knowledge. Furthermore, as national curriculum reform efforts get underway, a "standard one-fits-all model of curriculum and continuous assessment may be too crude to meet the unique needs of children who should take different learning paths. CRIQPEG and IEQ2 could lead the national discussion in this important area.

Summary

Exciting improvements occurred in Ghana as a consequence of IEQ research and intervention. A structure and momentum for change is evident in the successes produced by these efforts. Although many of the findings are not new (e.g., the crucial roles of instructional leadership and classroom level assessment), the IEQ process of assessment => assimilation =>action and its power to affect change was an important discovery. Ghana research validated the power of this cycle to influence and empower stakeholders, and, in so doing, to affect all aspects of the educational process from the individual child to the top policy maker.

POST SCRIPT

Since IEQ1 ended, important developments in Ghana have underscored the effectiveness of the IEQ approach. As word spread about IEQ1, interest in the process and interventions grew. In the final

year of IEQ1, children in level 6 classrooms in Intensive and Non-Intensive schools were tested as part of a special subsample of the CRT program. Results indicated that children in the Intensive Intervention schools scored significantly better than their peers in the IEQ Non-Intensive Intervention schools as well as their peers in non-IEQ public schools [Ministry of Education Primary Education Program (PREP), 1997]. In each case, a greater percentage of the children in the Intensive Intervention schools scored at or above the mastery level.

Also worth noting is that the approach being used in the current USAID basic education reform project (funded in 1997) in Ghana draws extensively on what was learned from IEQ1. The basic structure of the project calls for involvement by local educators and the community in data gathering and problem solving. CBA assessment instruments are being adapted for national use and CRIQPEG has been contracted to take a lead role in the assessment.

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“The Quality Link” (The Newsletter of the Improving Educational Quality Project) Each of the 6 editions describes aspects of IEQ-Ghana. Copies may be obtained from the Institute for International Research, 1815 N. Ft. Myer Drive, Arlington, VA 22209 USA.