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**THE FEASIBILITY
INTEGRATING PROGRAMMED LEARNING
WITH CONVENTIONAL INSTRUCTION IN
LIBERIAN PRIMARY EDUCATION**

November 1986

IEES

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Efficiency of
Educational
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November, 1986

Submitted to:

The U. S. Agency for International
Development

and

The Ministry of Education
Monrovia, Liberia

by:

IEES
Improving the Efficiency of Educational Systems

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FOREWORD

For the past several years the Ministry of Education has been conducting a development project "Improving the Efficiency of Learning," assisted by the U. S. Agency for International Development. The project consisted of developing teaching-learning approaches based on the principles of programmed instruction. In the developmental research phase the new instructional processes and materials were formatively tested and revised based on learner performance in experimental Liberian public primary schools. By the end of the project the program was judged a success by external evaluators, by the reactions of teachers and parents, and by the academic achievement of the children who were in the experimental schools.

The Ministry of Education, confronting the problems of introducing this innovative teaching approach in schools throughout the nation, requested a study be done to assess the feasibility of effectively integrating the programmed learning approach with the traditional schools. And if such integration of methodologies is found to be feasible, what are the practical problems of integration which may be anticipated, and what measures can be taken to deal with these problems. Also of concern, were cost issues. Could the Liberian government afford to implement an integrated curriculum - and could it afford the continuation and maintenance of the system in the years to come.

A study team was convened in Liberia in October and November, 1986, consisting of the following:

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The Study Team gathered and analyzed information on the current status of Liberian public primary schools, the nature and quality of currently available instructional materials, the teacher training programs, and the administrative, management and school supervision functions. It was their conclusion that integration of the innovative programmed learning system with the traditional instructional programs, and the newly available elementary textbooks, was not only feasible but highly desirable. The team report concludes with a series of recommendations for the planning and implementation of the new, integrated Liberian Primary Education Program.

ACKNOWLEDGEMENTS

The Study Team has visited schools, and talked at length with teachers, principals, supervisors, and children. We have also had extended interviews with numerous officials of the Ministry of Education, Ministry of Finance, Bureau of the Budget, and the Ministry of Planning and Economic Affairs. We met with representatives of the University of Liberia, Cuttington University College, and the Liberian Rural Communications Network. To these people we wish to express our thanks. They are too many to name, but were of invaluable assistance.

We particularly appreciate the support we received throughout the study from His Excellency Othello Gongar, Minister of Education. Equally helpful were Dr. Stanley Handleman and Dr. Murray Simons, of the U.S. Agency for International Development.

THE FEASIBILITY OF INTEGRATING PROGRAMMED LEARNING
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I. Introduction

In September, 1985 USAID and the Liberian Ministry of Education entered into an agreement for the implementation of Phase II of the Improved Efficiency of Learning (IEL) Project. This second phase is for the installation of, on a nationwide basis, the sequenced low-cost learning system of primary instruction developed and field tested during Phase I. The purpose of the project is to upgrade the quality of education in all of Liberia's public primary schools through improvement and expansion of teacher training, improved supervision of and support for classroom teachers, and the production and distribution of the IEL instructional materials.

The initial IEL project was undertaken, starting in 1979, to address two basic educational problems: an almost total absence of instructional materials in the classrooms; and a marked shortage of trained and qualified teachers. The IEL I project developed a low-cost system of sequenced learning modules, the instructional objectives of which were derived from the official national curriculum. Also developed was a four-week inservice teacher training program in the methodology of the system. Through a six year period the IEL system was formatively developed utilizing extensive field tryouts as the basis for revision and improvement of the system. By 1985 the instructional effectiveness and cost efficiency of the IEL system had been empirically validated in representative Liberian primary schools.

The Present Problem

The problem which the present study is addressing is whether, and how, the new system can be effectively introduced into the existing system. Of the traditional system, what will be retained, what will be eliminated, and which elements will need modification? In brief, what variables of the old and new systems must be taken into account by the Ministry of Education to insure that the new "whole" is an effective integration of the parts.

A major variable, not anticipated at the inception of IEL I, is the potential availability of textbooks. The IEL system

was designed to "stand alone," that is, be the sole instructional modality in the classroom. A major question which will be addressed by this study is "Does it make sense for both textbooks and IEL materials and processes to be used in public primary schools?" Can Liberia afford the simultaneous use of both kinds of materials? Will student achievement be enhanced thereby, or should a decision be made by the Government to opt for one of these two instructional approaches - textbooks or IEL - to the exclusion of the other?

Given the severe shortage of resources to support public primary education in Liberia, it is remarkable that two major educational development projects could have been undertaken simultaneously without regard for the need for their eventual coordination and reconciliation.

The presently available textbooks are a result of the World Bank Fourth Education Project which was initiated almost concurrently with the startup of the IEL project. The Fourth Education Project, as with IEL, was intended to address the lack of instructional materials and trained teachers, although through an alternate and more traditional approach. The World Bank project provided for the large scale procurement of textbooks to be sold to students and a 16 week teacher training program following a traditional and conventional methodology.

The Ministry of Education became aware of the need to resolve these questions, and provide for the integration of the two approaches in early 1986. At that time it requested that an assessment be made to examine the relationship among these two apparently diverse approaches and to explore the feasibility of integrating them with the traditional existing system into a consolidated primary education program. In this instance the traditional system is one with large numbers of inadequately trained teachers and without textbooks or IEL materials.

The Approach to the Problem

The present study has been undertaken in order to address these problems and to determine other implications and effects of introducing the "Improved Efficiency of Learning" (IEL) materials and processes into the primary schools of Liberia. How must, or can, the IEL system be integrated with other parts of the primary educational program in order to be optimally effective and to generate the greatest level of acceptance by those teachers and administrators who will be responsible for its operation and maintenance? Since the IEL approach is an innovative instructional system, a summary description of the IEL system - how it was developed, its

characteristics, and its strengths and weaknesses - is included as Appendix III.

During and following its development, the IEL system was extensively evaluated and its cost feasibility and effectiveness has been carefully analyzed. Based on these findings, and its own several years experience with IEL, the Liberian Government decided in 1985 to proceed with a nationwide implementation of the system. The U. S. Agency for International Development agreed to support this national dissemination effort and the two governments entered into a new project agreement - IEL II. The IEL II project has been underway since September, 1985 and, to date, the system has been installed in 109 schools throughout the country, with a total enrollment of more than 23,000 students. Some of these were the experimental schools in phase I of IEL and have continued with IEL as their routine mode of instruction. These 109 schools represents 13 percent of the nation's public primary schools and approximately twenty-seven percent of the students enrolled in public primary education. A good start on nationwide diffusion has been made.

Despite this, IEL is still regarded by some Liberian educators as something of an "experiment" which has yet to fully demonstrate its appropriateness and worth. There is an apparent concern among these educators that the present Liberian system, with which they are familiar and comfortable, is to be totally replaced with something new and radical. The Liberian government should take steps as soon as practicable to allay these concerns and to remove the ambiguity associated with this educational improvement effort.

In order to establish a clear demarcation between the IEL developmental experiment and to inaugurate a realistic program of national implementation, the study team recommends that the new system, of which IEL is a fundamental component, be renamed the Liberian Primary Education Program (LPEP), and this initiative be described as what it is, a nationwide initiative for the implementation and operation of a competency-based, mastery learning system of primary instruction.

Preliminary Measures

The following are three steps which the study team feels the Liberian Government should take without delay.

1. A National Policy Statement. LPEP is intended to revitalize primary education throughout the nation. The increased efficiency of operating the schools and the improved quality of instruction is expected to lead to expanded

enrollments at all levels. The nature and extent of this revitalization effort needs to be communicated to all citizens and teachers. A national policy statement should be issued by the Office of the President, explicating the scope, timing, and nature of this improvement initiative. The promulgation of a national policy statement needs to be immediately followed by a continuing and carefully planned, nation-wide public information program via radio, newspaper, and other appropriate dissemination means.

2. Orientation of Educational Leaders. LPEP orientation and introduction seminars for key educational leaders from throughout the nation should immediately follow the President's announcement of the new LPEP initiative. These sessions should confirm that, in fact, a new and somewhat different primary educational program has been developed through IEL I, that it has been demonstrated to be highly effective, and that a five year program is underway to integrate the IEL programs with other available educational resources and install and operate the program in all of the nation's primary schools. The issue of these orientations will not be whether or not to undertake the LPEP initiative (that decision already will have been made), but to inform the educational leaders about the nature of the new system, how its implementation will be phased, and what effects on other elements of public education may be anticipated as a consequence of the program.

3. A Bureau of Primary Education. To publicly and concretely demonstrate its commitment to a reform of the primary education program, the Ministry of Education should create a Bureau of Primary Education (BPE) within the Division of Instruction. The BPE will be headed by an Assistant Minister, who will report to the Deputy Minister for Instruction. The BPE will have total operational responsibility for all government sponsored primary schools and will be responsible for the implementation of the LPEP. The present IEL Project Unit will be merged with the new BPE, IEL will cease to exist as a developmental project, and will become a routine and continuing part of the support and operation of the nation's primary education program.

II. Development of an Integrated System of Instruction

Rarely, if ever, does an educational innovation totally supplant an existing instructional system. If the innovation is to be effectively used it must be carefully integrated with the existing elements of the system it has been designed to reinforce. There is a natural resistance by individuals and organizations to change, and the introduction of an innovational practice is invariably difficult to accomplish. The instructional system consisting of materials and teaching/learning processes that has been empirically developed over a several year period by the "Improved Efficiency of Learning" project represents a major and comprehensive innovation. In order for the IEL system to become an effective and enduring component of primary education in Liberia its insertion into the existing system must be done with some care. Such insertion will cause some practices to cease and others to be considerably modified, and these processes of change are never accomplished easily. However, the introduction of innovation can be greatly facilitated if the areas of interface between the old and the new, and the potential points of conflict and friction between these, are anticipated. The present study is an attempt to identify these points of potential friction and to plan measures that will minimize conflict and obstruction as a new instructional approach is integrated into a traditional and conventional educational milieu.

Eight areas of educational support or practice have been identified which are likely to effect and be effected by the implementation of the LPEP Program. These are:

1. The Uses of Instructional Materials in the Classroom. The IEL programmed teaching and learning materials have been developed to "stand alone", that is their appropriate use, as is, will result in an acceptable and predictable level of student achievement. In order to be effective, they must be utilized in a rather tightly prescribed way. However, even the most fervent advocate of the programmed learning approach will acknowledge that such instruction can be more effective if supplemented by creative teacher activities and supplementary instructional materials. It appears likely that, at least at the higher primary levels, textbooks may be available to supplement the IEL program. In a later section of this study steps will be described, which if taken, will result in a "Mastery Learning" approach, integrating the use of IEL and other presently or potentially available instructional resources.

2. The Teacher's Role in Instruction. As the coordinator and implementer of the programmed learning

lessons in the integrated system, the teacher is required to perform in ways that depart considerably from his/her conventional classroom role. With a mastery learning approach, the teacher must perform in other ways. In neither instance are the required behaviors complicated nor difficult for the teacher to acquire, but training and guidance must be provided for effective instruction to occur. The means for integrating traditional and nontraditional teacher functions must be provided.

3. Teacher Training. Presently in Liberia, there is a great deal of fragmentation and disarticulation among the several primary teacher training programs. Special teacher training programs have been initiated to support various donor-assisted educational development efforts and the Ministry of Education sponsors other teacher training programs. Others are offered at Cuttington University College and the University of Liberia. There are significant variations in the skills being taught in some of these programs and, in some instances, there are inconsistencies and even incompatibilities. With the introduction nationally of a uniform system of primary education, it is essential that these programs for teacher development be articulated and made consistent in the content and skill training they deliver. An integrated and unified approach to primary teacher training must be developed.

4. Installation of the New Primary Educational Program. When the LPEP is fully implemented it will be operational in 830 schools throughout the nation. Presently, 109 schools are using the IEL alone approach. There are numerous tasks which must precede installation of the new LPEP program. These include; materials printing and distribution, teacher training, activating the monitoring/supervision functions, etc. Obviously, LPEP cannot be activated in the remaining 721 schools simultaneously, but must be phased in an orderly way. The study team recommends dividing the remaining schools (or classrooms) roughly into thirds - 221 schools would be prepared for start-up by March, 1988 (Project Year three); and 250 schools would be added by March, 1989 and the last 250 by March, 1990 (Project Years four and five). The integration issues associated with the installation will be more fully discussed in a later section of this report.

5. Supervision and Field Support. Presently there is considerable fragmentation and lack of coordination in the supervision and support of the primary schools. Special projects, such as IEL, have their own supervisory personnel, whose support/monitoring functions are fairly well defined. Generally, special project supervision seems to operate more

effectively than the ordinary field supervision processes, mainly because of easier access to transport, better logistical support, and clearer terms of reference. If the new primary educational program is to be implemented within routinely operating organizations, the supervision process must become more task oriented and more coherently organized. Supervisors must also be better supported.

6. Program Monitoring, Evaluation, and Information Management. The Ministry of Education has created an organization, the Information Systems and Data Services Division, within the Department of Planning and Development, to operationalize data management. This unit is reasonably well equipped with microcomputers, but needs assistance with developing the information gathering procedures that will be needed for effective monitoring and evaluation of the installation and operation of the new primary program.

7. Materials Publication, Storage and Distribution. There needs to be integration of the planning and management of the publication, storage, and distribution of the IEL materials, teacher guides, and those textbooks to be made available to the schools.

8. Community and Parent Involvement. Alternative strategies for increasing the awareness of, and involvement in, school activities need to be developed and tried out. Field supervisors, teachers, and principals need to be encouraged to organize parents and community leaders for greater participation in school affairs. Such involvement can serve to relieve community concerns about the introduction of innovations into their children's classrooms. It can also result in more local, in-kind support for the schools.

In virtually all educational systems, whether local, regional, or national, there are four major components: (a) the instructional program; (b) the teaching staff; (c) supervision and school support; and (d) administration and management. For purposes of the present research analysis the study team judges it useful to identify and examine the eight specific points of interface between the traditional and the new system. However, for further planning purposes it will be simpler to deal with these in the context of their place in the four major components in the educational system. In the following sections of this report, the current state of affairs in these four areas will be summarized, with recommendations as to means by which more effective integration can be made to occur. Finally, the implications of the recommended integration measures for finance and resource allocation will be discussed, i.e., what will be the effects, if any, on project budgeting, recurring school operational costs, and the long-term educational budgeting process?

III. Instructional Materials and the Primary Educational Program

The two major problems of the Liberian Primary Education System are the lack of adequate educational materials (most often thought of as textbooks) and the lack of trained teachers. These problems are exacerbated by a severe and continuing shortage of funds for recurrent and capital costs. The identification of these problems led to the development of two important projects which have arrived at somewhat different solutions which are sometimes perceived as incompatible. Through the IEL project, advances have been made in the development of a carefully structured programmed teaching and learning package for primary students from first to sixth grade, which includes teacher training and supervision elements. The system is currently installed in 109 schools with about 600 teachers and more than 23,000 students. This represents 7.6 percent of the public primary schools and 27 percent of the total enrollment of these schools. The World Bank's Fourth education loan has financed the purchase of more than 650,000 textbooks and a teacher training system for 2100 teachers. The degree of success in getting textbooks into the classrooms is a critical issue in this World Bank effort and will be discussed in more detail below, as will the nature of the teacher training program. At this point, it appears that some progress has been made toward solving the two major problems - absence of instructional materials and a shortage of qualified teachers - although much remains to be done. We will begin by reviewing the success of distributing textbooks through the WB IV project and then compare the new approaches to the teaching-learning-process as they occur in traditional classrooms.

1. The World Bank Textbook Program. As a major part of the Fourth World Bank Loan, a total of 667,273 textbooks were ordered and delivered to the Ministry of Education. These texts are primarily in the subjects of Mathematics, Social Studies, Natural Sciences, English, and Reading for the six grades of primary school, (a small number of teacher's texts were also purchased, as was a pilot version of the Math series, but their amounts and programmatic importance are not significant). Besides the direct benefits of making texts available to primary school children, the project also stimulated text production in the Ministry of Education, and the Mathematics and Social Studies series were written there, although printed abroad.

These books have been offered for sale to students throughout the country, although one of the criticisms about the textbook project is that the books have not sold well. Another, is that most of the texts which have been sold, have probably gone to private primary schools. In the following chart are figures on the sales and current availability of the texts, by subject matter and grade level.

School Texts Purchased, Sold and in Stock

Text	# Prch'd	Cost to Public	# Sold July 85	#Sold July 86	Stock At Agents	Stock 10/26/86
Evans Primary Language Texts						
EP-1	20900	\$1.50	13139	4231	3373	82
EP-2	14555	\$1.50	9816	2349	2562	26
EP-3	11933	\$1.50	8344	1581	1156	23
EP-4	2642	\$2.50	1406	1059	640	0
EP-5	3285	\$2.50	1238	1092	1195	29
EP-6	3363	\$2.50	1274	1108	1170	29
Elementary Mathematics for Liberia						
EM-1	52000					
	(60,599)	\$3.40	3167	3265	14492	24640
EM-2	38000	\$3.40	2809	3184	10288	17850
EM-3	32000					
	(33370)	\$3.40	2869	3422	8824	14000
EM-4	26720	\$4.50	1	1387	1031	8400
EM-5	22000	\$4.50	1	1195	919	15700
EM-6	20000	\$4.50	0	904	976	13900
Social Studies: Liberia						
SS-1	54740	\$2.75	7269	3680	14615	26900
SS-2	38000	\$2.75	6220	3680	10151	16500
SS-3	52000	\$2.75	7009	4159	12249	20000
SS-4	13600	\$4.50	71	3550	5179	2900
SS-5	19920	\$2.25	5444	2722	4151	5000
SS-6	9950	\$2.30	4169	1615	3428	20
Atlas	70000	\$2.30	6281	5549	17076	40000
Concepts in Science: Curie Edition						
NS-1	41139	\$4.00	6936	3666	22789	5000
NS-2	30472	\$4.00	7284	4244	15320	2000
NS-3	25677	\$4.00	7223	3338	12814	1100
NS-4	14000	\$4.00	4548	1691	6082	300
NS-5	11000	\$4.00	3093	1594	5163	286
NS-6	10000	\$4.00	2478	1450	4683	206
Scott Forseman Reading Series						
RD-1	4814	\$4.50	2085	2056	1232	40
RD-2	3823	\$4.50	2096	1684	793	57
RD-3	3445	\$4.50	1091	1515	724	47
RD-4	2990	\$4.50	1994	1405	421	19
RD-5	2412	\$5.10	1279	963	501	23
RD-6	1924	\$5.10	758	622	637	22
	667273		122252	73960	184634	215799

 These data show that about 40% of the texts have been sold

(the July '86 figures cover about 90% of the agents, as complete data are not available. Further data show that around 81% of the purchased texts have sold in Monrovia and Montserrado County. This data supports the contention that texts are most likely to be found in private schools.

2. A Comparison of Three Classroom Systems. In analyzing the way primary education currently operates in Liberia we find that it has become customary to refer to three types of education. These are: (1) the conventional or traditional approach, which has historically operated in the schools and which sometimes is called "status quo"; (2) a new version, the optimum conventional approach, conceived as the traditional approach plus broad availability of textbooks for most students; and (3) the IEL approach, the complete system of programmed teaching and learning. It can be argued that the second - the optimum conventional approach - does not really exist in any public schools in Liberia at the present time (as an examination of textbook sales figures suggests). Nonetheless, it is considered a possible future alternative, and will be included in this comparison. The amount of descriptive and evaluative information available on the IEL system is considerable and is summarized in Appendix III. The general nature of the status quo or conventional system is also well known, and the textbook inclusion is only a variation.

In order to show the major differences between these three educational modes, we have identified thirteen elements or dimensions which characterize the basic nature of the teaching-learning process in the classroom. These elements allow for the description and comparison of what goes on in the schools, and will be used to examine the three main types or approaches to classroom operation. Similarities and differences will be highlighted, and the advantages and disadvantages of the different approaches will be discussed. The elements are as follows:

a. The Instructional Medium is:

Conventional - the teacher who presents information to students through talking, or explaining the content. The critical point is that the teacher is the only medium of instruction in the traditional process.

Textbook - the teacher who presents information to students through talking, or explaining the contents, and can also supplement the verbal presentation with the textbook which can be used in class and taken home (by those students who have purchased it).

IEL - in the Programmed Teaching (PT) mode the teacher is a

critical element, presenting information according to the modules to insure that the delivery is precise and reliable, while the students also have modular review materials to study in small groups. In the Programmed Learning (PL) section the basic medium is the modules which students read, using the teacher only as a resource or backup person (positive effects on student learning of clear explanations by teachers have been found in 50 studies reviewed by Averch, et.al., 1974).

b. the structure or organization of the symbols which are being conveyed, the form is:

Conventional - oral presentation, that is the verbal construction of information by the teacher (as propositional information), also called "teacher talk."

Textbook - oral presentation (verbal form) is supplemented by written text (also primarily verbal and propositional, but including images).

IEL - in Programmed Teaching the information is structured in a programmed verbal form supplemented by programmed written verbal information, which may include images. In the PL mode the amount of verbal (oral) programmed information is significantly reduced, replaced by written programmed exercises.

c. the contents are:

Conventional - the basic subjects of language, reading, mathematics, social and natural sciences in all three modes, and emphasize verbal information more than the development of intellectual skills, motor skills, attitudes, or cognitive strategies.

Textbook - the same as conventional

IEL - the same subjects are taught but it is important to note that the material is much more skill oriented, teaching how to do things, as opposed to the propositional information orientation of the conventional and textbook approaches.

d. Teacher Roles:

Conventional - the teacher makes almost all decisions, presents the information, decides about distribution of time, when class begins, ends, how much time is spent on each subject, what content is included, etc.

Textbook - same as the conventional system

IEL - the teacher is a key element in the classroom operation, but in both the PT and PL modes the major decisions about content, presentation, timing, etc., have been made by the designers, and the teachers' primary role is to implement the design, adjusting it to local classroom necessities, but not altering it in any substantive way.

e. Student Role:

Conventional - the student passively absorbs information provided by the teacher, presumably paying close attention to what is said with very little open participation in major decisions.

Textbook - same as conventional, except that student can consult the text on his own.

IEL - student is a more active participant because he must respond overtly in the PT modules to teachers signals (as many as fifty times in one day) and in study sessions. In PL the student must respond in the presence of classmates in the small group study settings, also at high frequencies, but has a low level of participation in decisions, and is a subject of the design and of its group processes.

f. Time;

Conventional - time within the school day is fundamentally fixed (by the teacher and, to a lesser extent, the curriculum design) as a certain amount dedicated to exposition of each subject (or other activities). The amount of exposure to teacher presentation is equal for all students.

Textbook - same as conventional except that students may be able to consult the texts ad lib.

IEL - is carefully scheduled and utilized, helping to insure a higher total amount of time on academic tasks, and allowing some flexibility in the small group study sections, but has considerable trouble adjusting to makeup for prolonged student or teacher absences.

g. Individualization:

Conventional - the instruction is almost always in group form with very few possibilities for individualization.

Textbook - the same as conventional except that students can have individual time with their texts (if they have them and are motivated).

IEL - is a group format but has several operating procedures

which are designed to make it more individualized. These procedures include identification of slower students in order to place them closer to the teacher, flexibility in review and study sessions which may respond to individual needs, and much more individualization in evaluation procedures. However, the IEL approach has difficulty in responding to differential learning rates that are typical when high variability of students' ages exists (as is typical in rural schools).

h. Motivation:

Conventional - little is done to motivate children beyond making a good presentation, and it is assumed that students will bring their own motivation to the class (as a function of innate elements and/or parent stimulation).

Textbook - same as conventional, although content and design may be stimulating for some students.

IEL - close attention is paid to principles of motivation, particularly reinforcement of children's overt responses, with structured procedures for cueing, stimulating, and rewarding responses, but some children may tend to get bored in group study sessions and in the PL mode.

i. Responsibility for learning:

Conventional - the primary responsibility for learning is the students' who must pay attention, absorb and repeat on their own initiative. The teacher's responsibility is to insure a reasonably good coverage of the subject matter and a clear presentation of the information.

Textbook - Same as conventional

IEL - Responsibility is shared by teachers, designers and students. Designers have developed the IEL PT and PL elements in hopes that they will have an optimal structure and sequencing, which will be motivating for students and will increase learning. Teachers present the information and supervise small group study in hopes of stimulating learning. But the responsibility is not only the designers' and teachers'. Students also must make an effort to learn and share in the responsibility.

j. Purpose of Evaluation:

Conventional - the primary purpose is summative, that is to check on the amount of information which the student has managed to absorb during the teaching-learning process and can repeat on the test and against which a grade will be

assigned.

Textbook - the same as conventional

IEL - the primary purpose is formative, that is to provide feedback to students on their progress, particularly at the end of each module, although summative evaluation does occur as it is required by the grading system.

k. Form of Evaluation:

Conventional - the form is repetition of verbal (propositional) information presumably absorbed in the teaching-learning process.

Textbook - same as conventional

IEL - presumably the form may vary, with primary emphasis on skill demonstration (which may include verbal repetition), and problem-solving and some creative expression.

l. Comparison Base in Evaluation:

Conventional - students are almost always evaluated in relation to other students (similar entities) to see who has learned the most in what is usually called normative referenced evaluation

Textbook - same as conventional

IEL - much more use of criterion referenced evaluation, that is the comparison of the student's performance with the objectives which have been established for the modules. Requirements for grading also can sometimes result in norm-referenced measurement.

m. Frequency of Evaluation:

Conventional - primarily at the end of each semester in order to establish grades.

Textbook - same as conventional

IEL - individual (formative) testing occurs after every thirteen lessons, followed by group module tests (summative) and also semester tests.

3. Advantages and Disadvantages of Each Form. Having reviewed each of the three approaches to primary education it will be useful to list the primary advantages and disadvantages of each.

Conventional Education

The primary advantage of the conventional system is:

- It appears to conform to the traditional cultural expectations of the country in terms of what education should be, and is well known and accepted. It also seems to conform to (and perhaps have caused) the Liberian concept of "know-book".

The primary disadvantages of the conventional system are:

- It has a very low level of effectiveness in terms of students learning and continuing on through the system. The dropout and repetition rates are high, and the amount learned appears to be low (as affirmed by teachers and educators, and demonstrated in the 9th grade regionally standardized, West Africa Examination Council tests.)

- It places great emphasis on learning verbal, information in a "know about" form and gives very little attention to skill development, stimulation of thinking processes, cognitive strategies, and also slights development of attitudes.

- To function well it requires well trained teachers who have clear mastery of both subject matter and the best methods for teaching it, and diagnosing student success and errors in order to adjust pacing and detail of presentation. Such qualified teachers are in very short supply.

- It places the student in the very passive role of listener, a "sponge" which must absorb information (at a time in his development when he should be most active).

- It does not adjust to different rates of learning, diverse interests of the students, and the wide range of ages students who are in the classes.

- Its evaluation approach is summative or "end of course or unit testing." It is infrequent, and designed to "add up" what the student has learned, instead of providing diagnostic feedback to increase learning.

Optimum Conventional Education

The primary advantages of the optimum conventional (textbook) system are:

- The student can take the texts home to show his parents, to study at home, to ask for help from older brother and sisters.

The text is a durable (permanent) stimulus complex that can be re-read as many times as necessary by the student, and can be used in later years by other students (from the same family or sold as a used text).

- The text has images - photos, charts, graphs - which may help to motivate, and to strengthen learning.

- The text can be used by the student to make up work because of his absences or those of the teacher.

- The text can be used by the teacher to supplement and reinforce information which he/she is presenting in the classroom. Research has shown that students with textbooks can learn as much as eight to twelve percent more than comparable students without textbooks, other things being equal.

The primary disadvantages of the optimum conventional (textbook) system are:

- There is highly variable quality in the available texts and several of them lack adequate provisions for practice of the material to be learned.

- The texts reinforce the "know-about" approach, the mastery of context related verbal (propositional) information without adequately developing skills and higher order processes (with exceptions of Science and SF readers)

- The degree of availability appears to range from some texts, which have low sales, to others which have achieved somewhat higher coverage. The distribution figures are not sufficiently detailed to be sure of coverage. The study team's visits to schools in the field showed less than half the students of the private and concessionary schools have texts and less than 10% of those in the public schools.

- There is a general lack of congruence between the Liberian National Curriculum (RNC) objectives and those of the texts. This is despite the fact that the texts were chosen because they were the "most similar" to the national objectives. This incongruency between the content of instructional materials and national educational objectives is not unusual where commercially developed texts are used.

- The disadvantages of this approach also include those of the conventional approach (see above).

IEL Approach to Education

The primary advantages of the IEL programmed system are:

- It provides a great amount of structure, particularly in the PT mode, which helps to insure more time on academic tasks in the first three years; time on task has been found to be the single most potent variable in student learning.

- In general it increases the probability of learning, as demonstrated in the Kelley evaluation (20.6% advantage for IEL students over conventional in the first three grade, 16.8% in years four to six, Kelley, March, 1984.)

- It is skills based, placing emphasis on "how-to" lessons and therefore probably will have better retention and higher possibilities of transfer.

- It has been systematically designed, and closely follows the Liberian Revised National Curriculum (of 1979). Each goal and objective in the RNC is covered.

- It insures uniformity from school to school in what is being taught. The Ministry has a greater degree of assurance that the national curriculum is being followed, and in time, this should lead to more uniformity in student learning.

- The interactive nature of the program increases the likelihood of children having more fluency in English, of having a greater ability to communicate spontaneously, better skills at taking turns, conducting discussions, and giving and receiving feedback.

- The frequency with which students are evaluated in IEL seems to reduce any tendency towards test anxiety and may even lead to children looking forward to tests as opportunities to show what they have learned and receive feedback, which may be related to the general non-punitive nature of IEL.

The disadvantages of the IEL programmed system are:

- It is lock-step, which makes it less responsive to differential rates of learning, and causes re-entry problems when students are absent. However, this is not a comparative disadvantage because conventional classroom teaching has this same drawback.

- There are no amplifying materials for students to take home to show their parents, nor to study with at home. Previous IEL evaluators have pointed out this deficiency several times and the problem has not yet been resolved, possibly because of cost constraints.

- There seems to be poor development of parent and community support, in part because of the previous item.

- It breaks with the cultural tradition of "known-book" which is strong in the country, in the education system, and especially, in the higher education system.

- Group practice and the PL sections appear to lack adequate variation of activities, are sometimes considered boring by the students and some discipline problems have occurred. There may not be provisions for adequate individual response..

- It may not adequately teach critical thinking, self-discipline and creativity because it places too much emphasis on "correct" responses and group processes.

- PT teachers complain about too much work - a possible result of the high structure - while PL teachers find a fairly drastic role change for them, as they do not "teach" in the conventional sense.

- Although the IEL approach contains features which would make it easy to pay more attention to students' attitude development, it does not automatically do so.

These comparisons show that each of the three approaches has some advantages and several disadvantages. The continued use of these different instructional approaches in disorganized and separate ways, will not resolve many of the problems existing in Liberian Primary Education and is likely to exacerbate these problems.

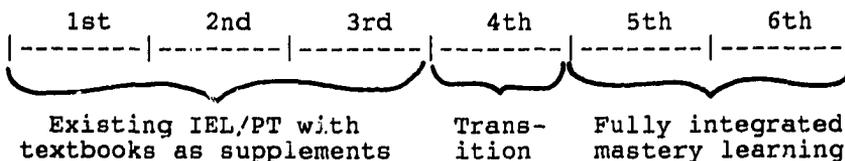
If predictable and relatively high levels of student achievement are the criteria by which instructional success is measured, then IEL is clearly superior to conventional and to optimum conventional instruction. On the basis of this comparison, the best mix would be a combination of IEL, textbooks, and some additional teacher-directed activities to form a new, broader and richer instructional approach. We suggest that this integrated approach be called the Liberian Primary Education Program (LPEP).

4. The Instructional System for Liberian Primary Education Program (LPEP). The primary purpose of this study has been to determine "the feasibility of integrating the IEL, textbook and traditional methodologies" (PIO/T, p.7). The study team believes that an educational and instructional system can be developed which will successfully integrate existing features, strengthen the most important elements, reduce or eliminate unnecessary redundancies, and provide an observable and significant improvement in the quality of primary education in Liberia.

The new system will be a competency-base, mastery learning system, developed by adopting certain positive aspects of the traditional educational system, integrating the instructional delivery components through the use of textbooks, and expanding and strengthening those concepts originally developed in the IEL program. Of particular significance, will be the clear and concise statements of objectives, and the emphasis on development of essential skills, which characterizes IEL. IEL's provisions for active responding of students during lessons, and the careful evaluation of student learning gains, will also be important contributions to the instructional program. The content and procedures will be bolstered by the inclusion of the concept of Mastery Learning. Mastery Learning (ML), is the application of a set of teaching-learning principles which will allow the large majority of the students to achieve high levels of performance in relation to all of the specified educational objectives.

The study team believes that such a system will be warmly received by most Liberian educators, and that the effective functioning of important parts of it have already been adequately demonstrated. It is our conviction that the integrated elements will be highly effective in providing a better, more relevant and well-rounded education for primary school learners. This is an instance where the whole should be greater than the sum of the parts! It should also be financially feasible.

The new instructional system will contain different content and methodologies for each of three levels within the primary school: the first, second and third grades; the fourth grade; and the fifth and six grades, as shown in the following diagram.



a. The First Level: First through Third Grades

During the first three grades the primary program will take advantage of the obvious strengths of the IEL/PT format, which provides an optimum amount of structure for the classroom operation, specifies clear educational objectives, and insures that a large amount of time is dedicated to academic

learning tasks. The programmed teaching format will be integrating with the use of textbooks as general supplements to the more structured portion of the curriculum. These texts will be used to provide enrichment and adaptability for faster or older learners, for enriching certain learning objectives, providing sources of reading materials to help students broaden and strengthen the skills they acquire through the IEL modules. They will help develop beginning self-discipline and learning skills and habits, and serve as occasional take-home materials, or as the basis for certain take-home study assignments which students may write into their personal study books. They can also serve as backup sources to help children re-enter the IEL materials after having been absent from school for more than a week.

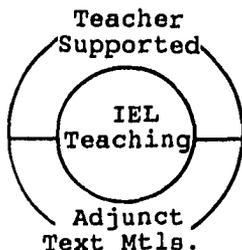
What is the rationale for this combination in the first three years? IEL provides the clearest available statement of skill based objectives for the first three years. It has proven its capability to teach basic reading, writing and mathematics skills through the PT mode to a large majority of the students. Clear teacher explanations are always a positive factor in student learning and IEL results have been demonstrated to be 20.6% higher than those of conventional schools in the first three years of primary education (Kelley, 1984). It has a good level of acceptance by the teachers who have used it, and by those parents whose children have studied under it. The supplemental textbooks can adequately provide additional information, more practice in reading, language, social studies, or in mathematics, and more practice and skill development (inquiry) in natural sciences. They should serve as an optimal supplement to IEL/PT. Teachers, as their training and experience with LPEP increases, can provide more creative information, and provide further opportunities for student's to process, remember and transfer learned skills. Teachers can also stimulate more positive attitudinal development, such as better self-image as a learner, enjoyment of the subject matter and the learning process, and reduction of anxiety. Further, greater involvement of teachers in school and classroom decision-making will improve teacher motivation and commitment.

How can such an integrated mastery learning system be designed and developed? The first step is to implement the new LPEP program with IEL/PT in all public primary schools through a periodic expansion over three years, as will be explained in more detail in other sections of this report. For this level there should be a provision for the purchase, by the Ministry of Education, of at least three complete sets of textbooks (for each subject in the first three grades) for each public primary school. These texts will be placed in a each classroom to be used by teachers to supplement their work and can be used by students in class (for example, as

supplemental materials during Group Review sessions, or for make-up upon re-entry) and can be loaned to the students on a "check-out" basis.

The typical operating procedures for the first three grades will be quite similar to those explained in the IEL description with minor modifications, supplements and improvements occurring in the review periods. In the Direct Instruction sessions the teacher will follow the PT modules, making variations only when her own experience and the guide material have shown that the modules can be strengthened with supplementary materials (either from the local environment or from the texts). During the Group Review sessions the students will work primarily with the modular materials but may also use text materials or other activities on occasions which will be designed and then supervised by the teacher.

In graphic form it is possible to visualize the operating system for the first three years as follows. As can be seen, IEL occupies a relatively large portion of the "instructional space" and is the dominant feature.



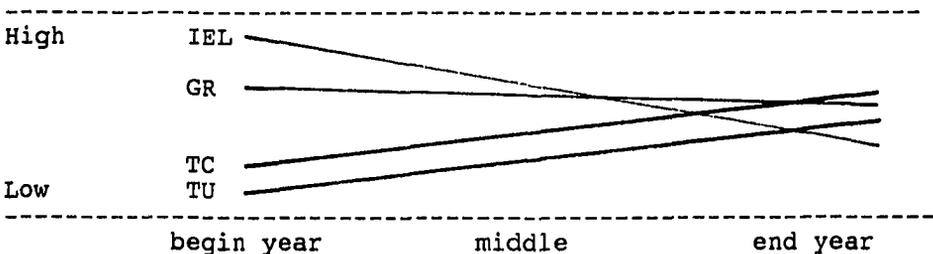
b. The Second Level: Fourth Grade

The mastery learning approach will begin in the fourth grade with IEL/PL modules combined with textbooks. The IEL/PL modules will serve as regular lessons and also as content guides in those cases where the teacher wants to present material through teaching. During the year there will be a gradual shift in emphasis from IEL to text, developing a "Mastery Learning" framework, as a transition period. In the semester of the third grade the IEL program shifts from the Programmed Teaching Mode to that of Programmed Learning. This shifts the instruction from teacher directed to materials oriented, with the teacher serving as a facilitator and resource person. The program continues to provide clear educational objectives, and insures a large amount of time dedicated to academic learning tasks, but now on the

basis of small group work. When the student arrives to the fourth grade he will have learned to function in the PL mode and so this year will be dedicated to making a transition from the IEL/PL system to a new LPEP mixture of media and procedures which begin to develop the basic characteristics of the mastery learning approach.

This fourth year will include teacher directed learning, adjunct use of textbooks, and organized home study, based around the IEL/Programmed Learning modules which will serve as source of objectives, structure, basic materials and evaluation procedures. The role of the textbooks will be as general supplements to the more structured (IEL) portion of the curriculum. These texts will be used to provide enrichment and adaptability for faster or older learners, for enriching certain learning objectives, providing sources of reading materials to help students broaden and strengthen the skills they acquire through the IEL modules. They also will help develop beginning self-discipline and learning skills and habits. They will provide occasional take-home materials, or as the basis for certain take-home study assignments which students may write into their personal study books. They can also serve as backup sources to help children re-enter the IEL materials after having been absent from school for more than a week.

This transition year will build on the fact that in the last semester of third grade the students will have learned to operate with the PL system. Because the LPEP program will be much broader and PL classes sometimes create boredom and may not teach the students as wide a range of behaviors as desired, the amount of variation in the program will progressively grow during this year. It is possible to visualize this growth in simplified form as shown in the following chart:



IEL = IEL/PL Materials TC = Teacher "Classes"
 TU = Textbook Use GR = Group Reviews, Discussions & Activities

The procedures for developing the activities of this tran-

sitional year will be highly similar to those specified in the following section (Fifth and Sixth Grades) with the difference primarily in the rate of development of use, rather than in substantive differences.

c. The Third Level: Fifth and Sixth Grades

At this level there will be a fully integrated mastery learning system based on the objectives and procedures provided by the IEL/PL modules and including new features such as increased teacher directed classes, new small group and home study procedures, more frequent formative evaluations of student progress, and textbooks available in each subject for each student (loaned or rented to each student by the school).

The main thrust of the Mastery Learning approach is that students are provided with optimum possibilities for learning including as much time as is needed (within certain obvious limits), repetition and variation of materials and objectives to facilitate learning, and positive feedback about progress until such time as they 'master' the objectives which have been established.

Operating classroom procedures for fifth and sixth grades will include:

- Objectives and materials support based on the IEL/PL modules which determine which goals are to be achieved and help to reach them, and are supported by,

- Teacher presentations, "classes", built upon the IEL/PL core modules as content guides (which will require development of a teacher's guide)

- Explained group study activities which will include elaboration and monitoring activities, discussions of different forms for strengthening learning and the ability to express, explain and discuss what has been learned. Teacher led experiments and related activities will also be provided.

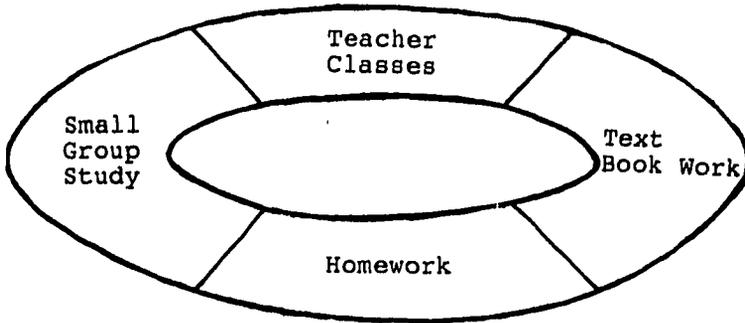
- Texts Assignments (with a guide for teachers and students)

- Out of Class Study Projects

- (possibly) Radio Supplemental Instruction for English

What is the rationale for this level of the program? The first element has been to build upon and extend existing concepts of IEL to include the mastery learning concept and to help develop a educational environment in which all students will have the maximum opportunity to achieve

success. Second, a more dynamic classroom operation will help to improve and maintain student (and teacher) motivation, strengthen learning, increase possibilities for transfer of learning, and develop more positive affective responses to the teaching-learning situation. IEL/PL classes can create boredom and may not always teach the students as wide a range of behaviors as is desired. Also, in IEL, the teachers' role is markedly different from the traditional approach and therefore is not always accepted by him/her. The combination of elements which have been suggested here bring together aspects of existing approaches with new elements to develop a more dynamic learning environment which will be more broadly accepted by teachers and parents, and will be more effective. The basic program may be expressed visually as shown in the following chart. Here it can be seen that while IEL is central and foundational, it is not as dominating a feature as in the lower grades.



How can this be designed and implemented? A few critical steps are required. First, the basic methodology, as described here, with its component parts, should be elaborated extensively, resulting in a detailed explanation and design of classroom operation principles and procedures, with the identification of the necessary input elements (texts, guides, materials, etc), and the specification of training, supervision and support requirements. For example, an initial analysis of the degree of compatibility between textbooks and IEL materials has shown that in fifth grade Natural Science, nine of the twenty-four existing IEL modules can be supported and/or expanded by materials taken from the Natural Science texts, while in fourth grade Social Studies thirteen IEL modules have direct support or expansion available from the text for the same grade. In Mathematics approximately 45% of the material from IEL is supported by the textbook. There is, of course, much other relevant and useful information to be learned from the textbooks.

Second, it will necessary to design and develop Mastery Learning Teachers Guides to explain the basic principles of mastery learning and formative evaluation, to show teachers how to use the IEL/PL materials as lesson plans, and how to structure classroom activities on the basis of students progress and interests. Pedagogical necessities, administrative contingencies (such as teacher's or students' absences), possibilities of cross-referencing with texts, and motivational necessities, are variables the teacher has to take into account when organizing the learning processes. The guides must simplify these processes and show the teacher what he/she is supposed to do. It should also show the teacher the importance of increasing the teaching of verbal expression (and how to do it). It should provide broadening examples which s/he uses for explaining concepts and rules in order to improve both mastery and possibilities for later transfer of skills. The guide should help make skills and concepts more immediately relevant by including examples or materials drawn directly from the local environment or from texts to increase student attention and meaningfulness (such as using a real plant to teach plant parts, or a good drawing or photo from one of the Science texts).

Third, materials or guides must be developed to show how IEL materials may be used to diagnose student learning deficiencies, in order to indicate needed remedial work or extra practice, and how to provide the feedback required to achieve mastery, how to improve students abilities to use PL and related lessons through teaching cognitive elaboration (use of questions, networking, underlining, paraphrasing, mnemonics, analogies, etc) and cooperative monitoring skills to assist peers and self in learning, presenting and reviewing materials.

Fifth, classroom procedures may be developed to prepare the students for the more traditional classroom they will enter in the seventh grade (the transition may be difficult after six years in a structured, well-organized and motivating program), including units that may help to develop self-study habits and skills, attentional strategies, problem solving and other cognitive strategies within each subject matter.

5. A Continuing Curriculum Analysis Effort

Curriculum analysis should be a continuing activity of the MOE/BPE which would result in the specification of new, and reaffirmation of existing goals and objectives, for the Primary level (LPEP). Such analysis should result in clear conceptual bases that are tied to the reality of the Liberian situation and the country's aspirations, and are responsive to, but not constrained by, any specific program, such as IEL or the World Bank texts. Such an analysis would

then serve to reduce ambiguity in the curriculum (content and methodology) and will serve as the basis for student and program evaluation, materials development, and future program improvement.

The current curriculum (RNC - Revised National Curriculum, 1979) is noted for its breadth, generality, content orientation, and heavy emphasis on context-based verbal information, without adequate emphasis on intellectual skill development, attitudes, and cognitive strategies. The IEL project developed a large number of carefully organized, operationally defined, and hierarchically sequenced objectives based upon the RNC which served as the specifications for the development of the PT and PL modules. Those objectives have never been fully intergrated into the national curriculum nor officially recognized, despite the important role they have played. Design, development and subsequent evaluation of LPEP should be preceded by an up-to-date statement of national curriculum goals and objectives.

The existing curriculum documents present broad goals, general objectives, specific objectives, content outlines, scope and sequence statements and some remarks concerning the evaluation of achievement (RNC, 1979). They do not include the kind of information which can be drawn from more recent techniques of analysis and which are vital for the development of a well-rounded, balanced curriculum. The curriculum study process should utilize modern curriculum analysis techniques, which will help to translate the goals into statements which identify the desired behaviors, which can then be translated into learning outcomes. The kinds of analyses suggested here will allow the determination of the relative distribution of instructional effort among areas such as verbal information, intellectual skills, attitudes, motor skills, cognitive strategies, and others. Depth of processing analyses allow the specification of how reliable the information must be in terms of recognition, free recovery, relational use, application or problem-solving, and creative use.

On the basis of these analyses the congruence between the IEL project materials, the RNC curriculum specifications, and the WB textbooks, should be studied in order to devise a coherent standardized set of expectations.

The RNC should go through this type of analysis, resulting, when finished, in new general goals, and intermediate and specific objectives. These should then be used to evaluate the existing IEL objectives to identify their strengths, weaknesses, gaps, divergences, etc., to fill in, correct, and expand. One can envision an analysis procedure such as the one shown in the following chart.

General Objectives	IEL Objectives	Textbook Objectives	Gaps or Errors	Required Corrections
Grade One				
Reading				
Language				
Mathematics				
Nat. Science				
Soc. Science				
Grade Two				
Reading				
Language				
Mathematics				
Nat. Science				
Soc. Science				
Grade Three				
Reading				
etc...				
Grade Four				
etc...				
Grade Five				
etc...				
Grade Six				
etc...				

Results of such curriculum specifications, not only should guide program development, but should also be circulated systematically to all teachers through the ML Teacher Guides.

6. Development of New Formative and Summative Tests Measures

As part of the curriculum and LPEP program new formative and summative tests and measures should be developed for use in the program, particularly at the fourth through sixth grades. It will be desirable to build a new bank of tests and discrete items of known validity and reliability and of diverse item types (based on the results of the curriculum study). These will be used in periodic formative or summative evaluation of program and student effectiveness, inasmuch as possible increasing criterion referenced approaches and reducing norm-referenced ones. This effort should take full advantage of the existing 310 criterion referenced tests developed in 1984 through the IEL project, as well as developing new

items, and broader item forms for more complex or creative responses, and answer forms.

These tests are urgently required because the current program for student evaluation is weak, and frequently results are poor or ambiguous.

The development of these tests should follow the completion of the curriculum study, should include details of the design of the new LPEP system, and take advantage of the IEL criterion-referenced tests currently available. These should probably be developed by an "evaluation unit" within the Ministry, other than, but cooperating with the West African Evaluation Council. High quality technical assistance (particularly during initial period) will be needed. Preparation of tests for all grade levels in all subjects should be substantially completed within one year.

7. Comparison of LPEP to other Classroom Systems

To place the new system into the same context as the comparisons which were shown earlier, the new LPEP system is described below in relation to the same thirteen elements, in order to show the advantages obtained.

a. Media in LPEP will include the teacher's classes, the textbooks (particularly at fifth and sixth grade), and the IEL/PT or PL modules, thereby increasing media range and possible responsiveness to individual differences.

b. Form is variable, being verbal (spoken) from the teachers and verbal (written) in the textbooks plus the visual materials provided by the texts. The group activities include verbal form as well as visual and iconic symbols.

c. Content remains similar in LPEP, although there is a clear amplification of the scope of what is learned, to include more intellectual skills development, attitudes and affective responses, cognitive strategies, and even more motor skills.

d. Teacher Role changes positively in this approach to include facilitator of learning, presenter of information (in PT classes and in "taught" PL classes), organizer of group activities, evaluator and provider of formative feedback, stimulator of affective responses and motivation, etc. The role certainly is more dynamic than in the existing conventional classes or the IEL classes.

e. Student Role is broadened in this LPEP approach to be more active, to participate in the group discussions and activities, in take home activities, in formative evaluation

activities, and in those activities which will build greater affective ties to learning.

f. Time is more flexible in this LPEP approach, with more emphasis giving more time or the possibility of repeating materials and activities when necessary, engaging in enrichment activities, receiving feedback, and providing more possibilities during available class time.

g. Individualization is increased in this LPEP approach, both in terms of individual engagement, and in possibilities for feedback and formative evaluation.

h. Motivation is significantly increased in LPEP through attention to affective response, provision of frequent feedback, increase in the possibility of relevance and individual attention.

i. Responsibility for learning, is divided between: the students, who should engage actively in the process; the teachers, who will manage the process in a dynamic form; the designers, who will constantly up-date the program on the basis of its success; and the Ministry officials involved who will actively support and supervise the LPEP.

j. Purpose of Evaluation in this system includes diagnostic, formative and summative purposes, with emphasis on formative feedback for achievement of mastery.

k. Form of Evaluation is broad and flexible, with emphasis one evaluating the full range of responses specified by the objectives.

l. Comparison Base in Evaluation is fundamentally with emphasis on evaluating the full range of responses specified in the objectives.

m. Frequency of Evaluation is often, after each module, each unit, and also at the end of each semester.

As this brief summary shows the new LPEP is a significant improvement over all three of the existing approaches (conventional, optimum conventional and IEL) because it takes the best points from each, combines them with a few new and critical elements, which are organized into a complete system, which has a high probability of significantly improving Primary Education in Liberia.

IV. The Teaching Staff

Introduction.

The USAID/IEL and Fourth World Bank projects are guided by two contrasting and potentially conflicting objectives concerning the role teachers are to assume within the Liberian primary education system and the manner in which they are to be prepared. The projects are driven by contrary conceptions about the function of the teacher in the classroom, they are based upon divergent notions of desirable teacher-student interaction patterns, and operate under different systems of instruction, teacher training, and supervisory support. This part of the integration study report compares the teacher training components of these two projects --along with the programs of Liberia's traditional teacher training institutions. It includes an analysis of program strengths and weaknesses, recommendations are presented for improving teacher education through a unified approach, and an implementation strategy is outlined to serve as a useful point of departure for further technical discussions and planning involving the wider audience of government policy makers, educators, and donors.

1. The Nature of the Problem. Both the IEL and World Bank projects are intended to offset two major constraints within the Liberian education system : 1) the severe shortage of instructional materials in most schools, and 2) the problem of underqualified and insufficient numbers of teachers. Early documentation of this problem indicates that in 1970, about 49 percent of the teaching force had an educational background below the 12th grade. Manpower supply and demand projections employed in the 1981 National Education Survey, estimated that the elementary school system would require an additional 3,597 teachers by the end of the decade to stay abreast of an expected six percent enrollment growth rate.

In reassessing the magnitude of the problem at the present juncture, three developments are immediately apparent. These are: 1) a decline in student enrollments; 2) a constriction in the teacher workforce; and 3) the changing composition of the teaching corps. From its high point in 1983, public primary school enrollments have declined by about 20 percent from 104,682 to a current level of 84,000. Though current data are not available, it is the general impression of most Liberian educators that a parallel pattern of decline has occurred in the private sector. MOE statistics for the six year period from 1980 to 1986, indicate that there was a concomitant constriction of the public sector teacher corps. During this period, statistics on the number of public school teachers indicate there was an eight percent net reduction from 3,393 to a current level of 3,126. Data

on the qualifications of public school teachers show that the number of "unqualified" teachers, i.e, those with less than a high school diploma, has declined to 13 percent. Viewed together, these patterns could be interpreted to indicate that a reduced demand for teachers and the resultant constriction of the job market, have severely limited the employment opportunities for the least qualified public school teachers who are leaving the field. Data on the composition of the private education teaching force are not available to ascertain whether these teachers are finding new positions in non-government schools.

These statistics would appear to indicate a general downward spiral in the demand for education, and in the production and retention of teachers within the public educational system. The direct implications for this study are twofold. They suggest that the educational system will require revitalization if the national development objectives of Government are to be attained, and secondly, that should new Government initiatives lead to expanded enrollments, greater effort will be required by Liberian teacher training institutions to sustain this effort.

Seven programs presently exist in Liberia for the preparation of teachers--four preservice, and three inservice programs. Institutions within the first group include four-year degree programs at Teachers College of the University of Liberia (UL), the Division of Education of the Cuttington University College (CUC), and two-year certification programs offered at the Rural Teacher Training Institutes (RTTIs) of Kakata and Zorzor. Short-term inservice training for practicing teachers is provided under both the USAID/IEL project and the current World Bank project. The RTTIs also operate five extension schools where in-service training leading to certification is provided after school hours to practicing teachers over a two year period. Enrollment in these extension schools, established some ten years ago, has declined drastically to between 15 and 20 participants. They are not analysed systematically in this study. The divergent nature of the objectives and curricula of these programs, and the lack of coordination between them, has led to a Balkanized system of teacher training characterized by inefficiency, and programmatic gaps and overlaps.

Considerable resources have been spent to raise the qualifications level of the Liberian teaching force. Combined allocations for these institutions and programs have increased significantly in the last decade, though the number of new teachers produced has not been proportionally high. It is clear that, within the context of the present fiscal crisis Government can neither justify nor sustain the costly drain on limited available resources, the high costs per

graduate, nor the marginal productivity of these programs. Thus, while upgrading the skills of teachers remains a central goal of the MOE and its development partners, it is evident that the need to integrate these efforts into a more coherent, consolidated system has supplanted this initial goal and assumes paramount importance as the sector's most critical policy issue.

2. The Role of the Teachers in Improving Educational Quality. There is a consensus among Liberian parents and educators that quality instruction is inextricably linked to the quality of teachers. The relationship is axiomatic: "Better schools have better teachers." Two examples from the Liberian context illustrate the strength of this assumption. Question: If a first-rate, traditional, private school opted to adopt the IEL approach, would parents continue to send their children? This was one of the questions posed to the director of the St. Martin's School in Gbarnga, operated by the British Catholic order of the Christian Brothers, and widely considered one of the better schools in the nation. The Director was confident that the school would maintain its high status within the community. Why? Because, in the final analysis, parents know, above all else, that St. Martin's is staffed with highly qualified and dedicated teachers, and this is more important than the type of instructional program employed.

The axiom that better teachers make better schools is held to be equally true in IEL schools. Even though IEL modules are designed to work with minimally qualified teachers, Windham (1983, Report No.1, p. 6) points out that the modularized curriculum should prove even more effective with qualified teachers "who can combine administrative and pedagogical skills to employ the curriculum materials more fully." In fact, it must be noted that, as a rule, those teachers employed in IEL schools are more highly qualified than those in conventional schools, and, one must assume, than those employed in the more remote rural communities. Only about two percent of IEL teachers possess less than a high school diploma, compared to 16 percent in the general teaching force.

Assumptions linking teacher quality to school quality find support in empirical studies. Research on those teacher characteristics which contribute most consistently to student achievement in developing countries has focused on such teacher attributes as: university level pre-service teacher training, level of formal education, in-service training, verbal proficiency, salary, social class, attendance patterns, and full-time versus part-time status. In a review of relevant research in Third World countries, Fuller (1985)

found strong and moderate achievement effects for such teacher attributes as: 1) social class; 2) language proficiency; 3) pre-service training; and 4) in-service training. With respect to the latter, Fuller notes that the research to date indicates that in-service training does impact positively upon pupil achievement, but that not enough is known about what types of training programs are most effective and most efficient.

3. The Role of Evaluation. Within the broader context of this integration study, the evaluation role with respect to teacher education is twofold. The first task is to reveal gaps, inconsistencies, and inefficiencies in existing programs which (particularly in the case of the IEL project) could pose problems at the stage of large-scale implementation (Lewy, 1977, p.120). This role is crucial because, if training programs are not effective in preparing teachers to fully utilize new or innovative instructional materials, it can lead evaluators to the erroneous conclusion that the materials are not achieving their objectives. The second task is to propose a synergistic strategy which makes optimum use of all existing resources and which, when fully implemented, will result in greater effectiveness and efficiency.

This task is made somewhat difficult by a curtain of ambiguity which almost universally cloaks teacher training programs. In assessing programs in Liberia, and generally in other settings, the evaluator is confronted with a lack of precision in the definition of 1) objectives, 2) those competencies to be acquired, and 3) the criteria which should serve as indicators for identifying enhanced teacher performance in the classroom. These problems are more troublesome in some programs than in others. The task is all the more complex when the evaluation involves multiple programs driven by multiple aims. These may cover a wide range from preparing teachers to utilize new instructional techniques (skills training), the reinforcement of competencies in content areas (knowledge building), the introduction of new teaching approaches such as the inquiry method process/communication), or any combination of these. Whether improved student achievement is the desired outcome in all cases is not always clear. In presenting general recommendations to policy makers about the impact of teacher training on school quality, evaluators and analysts must be particularly prudent in the use of generalizations and nomothetic causal models. The more appropriate question to be asked at the policy level is: "What types of programs, when properly implemented, are most effective and efficient in attaining what types of instructional improvement outcomes."

The guiding principle for this study is to provide

policy makers and donors with information on what mix of institutional roles and functions is best suited for an integrated teacher training effort, based on an analysis of institutional strengths and weaknesses. The analysis begins in the next section with a program overview, framed within an historical context, briefly describing the mission and scope of each of the major teacher education programs in Liberia. This is followed in the third section by a comparative analysis focusing on aims, objectives, curriculum content, and internal efficiency.

Overview of Teacher Education Programs

Several sources of documentation were used for the following overview of teacher education programs in Liberia. These include the USAID sponsored Liberia Education and Training Sector Assessment (1983), MOE annual reports, and program documents provided by the MOE Division of Teacher Education. Several excellent studies and discussions of subsector issues have been written by Liberians as doctoral dissertations (Coleman, 1980; Morris, 1968; Bensa, 1962) and as policy papers presented by Liberian staff at the 1984 National Policy Conference on Education Training held July 30 - August 3, at Cuttington University College e.g. "The Status of Teacher Education in Liberia and Related Issues," prepared by the MOE Department of Planning and Development; and "Teacher Education at the William V.S. Tubman Teachers College, University of Liberia," prepared by the Teachers College staff.

● The Issue of Qualifications and Levels of Teacher Certification

Considerable energy and resources have been directed in the field of teacher education toward improving the qualifications of practicing teachers. Two categories are commonly employed in describing this group within the active teaching force. "Underqualified teachers" are those who hold a minimum of a high school diploma, but have not received supplementary professional training in the field of education. "Unqualified teachers" are those who have not completed high school. As is almost universally the case, qualification is based upon levels of certification rather than demonstrated competency. The thrust of the World Bank teacher training has been directed toward upgrading the status of underqualified teachers to C level certification through in-service training. Officially, unqualified teachers are not eligible for participation, though it is believed that a small number have been accepted. IEL training can be described as competency based skills training and is provided to all teachers in a designated school. It does not lead to certification.

There are three levels of Professional Teacher Certificates (PTC), the criteria for which was established in 1982 by the MOE Board of Certification. The PTC Grade C, is the lowest and allows the holder to teach in elementary schools. Until the late 1970s, the two-year Rural Teacher Training Institutes prepared teachers for this level, though their programs are now limited to prospective junior high school teachers. The focus of Grade C level training has now shifted, through the WB-4 project, to upgrading the skills of 2,100 underqualified, practicing teachers through a major in-service effort. The PTC Grade B Certificate is required for teaching at the junior high school level, although it is widely acknowledged that a significant proportion of C Certificate holders do hold positions in schools at this level, and some in high schools. The Grade B Certificate is offered at the RTTIs which previously maintained dual tracks for C and B certification. The PTC Grade A Certificate is required for high school teachers and is awarded to those who have successfully completed a B.S. level program of professional education offered at both of Liberia's four-year higher learning institutions.

● General Planning and Coordination of Teacher Education

Mechanisms for planning and coordinating teacher education programs exist at three levels: the Ministry of Education; an inter-institutional Board of Certification; and the institutional authorities which administer the programs.

Director of Teacher Education - Within the Ministry of Education, a Division of Teacher Education headed by a Director charged with overall responsibility for planning, supervising, and monitoring programs. The Division includes the Certification Unit, the implementing agency of the Board of Certification. The Director has a staff of three professionals. These are Assistant Directors for Assessment and Placement, Certification, and Documentation. Under the present organization of the Ministry, the reporting pattern passes up from the Director of Teacher Education to the Minister of Education through the Assistant Minister for General Supervision, and the Deputy Minister of Instruction.

The terms of reference for the Director of Teacher Education are described in Appendix II.

Although ably staffed, the Division of Teacher Education would not seem, in its present form, to be able to effectively perform these tasks due to the budgetary constraints which generally diminish the Ministry's capabilities. The lines of communication with events in the field are, for the most part, limited to semestral reports from the RTTIs and university programs. Because of the unavailability of MOE vehicles,

field visits are infrequent. More often, contacts with local administrators occur when they are called to or have other reasons to visit the Ministry.

Board of Certification - The Board of Certification was constituted by the Minister of Education in 1982 to advise on all matters pertaining to the formulation and implementation of certification standards. The Board is comprised of nine senior officers of the Ministry of Education, the heads of each of the four preservice teacher training institutes, the President of the High School Teachers Association, and representatives of the major school systems, private admission schools, the West African Examinations Council, the Ministry of Planning and Economic Affairs, the Civil Service Agency, and the IEL Project. The terms of reference of the Board are presented in Appendix II.

The Board meets three to four times a year and has a Professional Certification Committee, and a Grievance Committee, which convene more frequently on an ad hoc basis. Recent Board activity has been its involvement in establishing a new salary structure for teachers, and the establishment of an implementation unit within the Teacher Education Division. The implementation unit is in the process of requesting certification documents for official review.

Institutional Administrators - As is the case in many northern countries, a tradition of institutional autonomy often exists at institutions of higher learning. Cuttington University is a private institution, and though public, the University of Liberia is an autonomous institution whose budget does not come from the Ministry of Education. The CUC program is administered by the Chairperson of the Education Division who also serves as Program Coordinator for the Cuttington Inservice Teacher Education Program (CINSTEP), funded under WB-4. CINSTEP is conducted jointly at the University and the RTTI of Zorzor and the program is assisted by Site Coordinators at CUC and ZRTTI. The University of Liberia Teachers College is directed by the Dean of the College, assisted by two Chairmen for the Departments of Elementary Education and Secondary Education. The Inservice program is conducted jointly at UL and at the RTTI of Kakata with the assistance of two Site Coordinators. The RTTIs are administered by Directors which operate under the direction of the Ministry of Education.

Planning and coordination of training within the IEL project is the responsibility of the Training Coordinator within the project's Implementation Unit.

1. University Level Degree Programs

The William V.S. Tubman Teachers College of the University of Liberia, established in Monrovia in 1950, is the oldest education institution in Liberia. The University was originally founded as a liberal arts college in 1862, and chartered as the University of Liberia in 1951. Cuttington University College (CUC), a private church-affiliated institution, was first established in 1889 in Suacoc, 100 miles northeast of Monrovia. The central location of the two institutions is to provide four-year Bachelor's degree level programs in education for the preparation of elementary and secondary school teachers. Both are equally responsible for implementing the WB-4 in-service training program which is discussed separately in this report.

The role of the universities within the teacher training system is currently being strengthened under the WB-4 project to improve what has been until now only a marginal contribution. In the past decade they have been adversely affected by problems of recruitment, and retention of students, and the status of their diploma level training has been called into question by the generally lower quality of students entering the programs, and by concerns about the responsiveness of these programs to professional needs.

In view of the Government commitment to upgrade the quality of the teaching force, the low productivity and high costs of these programs represent major constraints which have precluded the possibility of University pre-service programs from consideration as a viable strategy. Historically, the output of teachers from the two universities has not been significant, and the numbers entering the teaching work force has been marginal. From 1970 to 1985, UL and CUC averaged, respectively, eighteen and ten graduates (See Table 4.1). It is currently estimated that of the public primary school teaching force of 3126 only 45 hold B.A. degrees in education, representing less than one percent. Of these, some can be assumed to be non-nationals from other anglophone African countries, most notably, Ghana, Sierra Leone, and Nigeria, as well as Liberians trained abroad.

a. Staff

Over the years, the professional staff of the Teachers College has shown considerable development in the areas of Liberization and levels of qualification. Of 21 professional staff, nineteen are Liberian and two are expatriates; eight have terminal degrees, eleven possess Masters degrees, and two have B.S degrees. Under its current Fourth Education Project, the World Bank is committed to 26 staff years of fellowships to train four additional staff members to the

TABLE 4.1
TEACHER OUTPUT AT THE TRAINING INSTITUTIONS
FROM 1965-1985

Year	KRTTI	ZRTTI	Cuttington	University of Liberia
1965	33	55	-	-
1966	24	32	-	-
1967	13	30	-	-
1968	26	54	-	-
1969	33	56	-	-
1970	39	93	8	24
1971	-	106	3	15
1972	-	120	1	11
1973	34	41	4	16
1974	41	81	11	13
1975	40	150	9	12
1976	43	183	10	22
1977	28	226	8	21
1978	99	98	15	26
1979	134	98	15	19
1980	148	47	15	25
1981	152	98	11	19
1982	201	47	21	20
1983	99	98	15	17
1984	98	102	10	15
1985	71	17	10	(NA)
	1,356	1,832	163	275

Ph.D. level and two to the M.A. level. In addition the University is expected to recruit five prospective staff members for M.A. level training. The CUC Teachers Division has a small but highly qualified faculty of five, three of whom have doctorates.

b. Target Group and Selection

Admission to the University of Liberia is based upon performance on the University Entrance and Placement Examination. In recent years only three to four percent of the students who apply meet the required standards. In 1980, of 2,919 candidates, only 107, or 3.6 percent, attained the minimum score of 50 percent and above in English, and 20 percent and above in Mathematics. To compensate for the poor high school training received by the candidates, the University is required to provide one semester remedial courses to most students before admitting them into the degree program. Education is not generally considered a promising career path for high school graduates and those who enroll in university level Education programs are generally not the best qualified applicants. A very important percentage of those who enroll at Teachers College are graduates of the RTTIs.

c. Follow-Up Activities

To date there have been no systematic tracer studies on the career paths of University trained educators nor on the suitability of their training to classroom conditions. It is widely acknowledged that only a small percentage of graduates become elementary school teachers, and that most are absorbed by the Government and private sector demand for general liberal arts graduates. For those who do teach, there is no information on performance to allow one to draw objective conclusions about the adequacy of the training. An impact study, however, has been proposed jointly by the UL Division of Continuing Education, and the National Union of Liberian Teachers. The proposal argues, appropriately so, that the current policy emphasis on upgrading the skills of the "unqualified" teachers in the field ignores the need to help trained teachers to do a better job. The proposed research project, Teacher Education and Achievement (TEA) would assess the performance of "qualified" teachers, i.e., graduates of teacher training programs, examine the importance of such training on student achievement, and propose recommendations for improving the quality of pre-service training and addressing teacher performance deficits through in-service programs.

2. Certificate Level Teacher Training Institutions

Certificate level training in education for high school

graduates is provided at the Rural Teacher Training Institutes (RTTIs) at Kakata and Zorzor. The Kakata Rural Teachers Training Institute (KRTTI) was established in 1964, and the ZRTTI in 1961, both through the joint efforts of USAID and the Government of Liberia. Both were established to meet the demand for rural teachers by offering three year training programs to junior high school graduates under a formula by which the first year would focus on upgrading the academic level of the trainees. This program was eliminated at KRTTI in 1971 and at ZRTTI in the 1970s, and replaced by the current one. The RTTIs have not responded well to the challenge of correcting the deficits in teacher availability and quality. Average production from 1965 to 1985 for Kakata and Zorzor was, respectively, 71 and 87 graduates. However, for ZRTTI production dropped from a high in 1977 of 226 to a low, in 1985 of 17. For KRTTI production dropped from a high in 1982 of 201 to a low of 71 in 1985 (See Table 4.1).

a. Staff

There is a general consensus among Liberian educators that the quality of instruction at the RTTIs has been constrained by the low academic level of its staff - most of whom possess only the first university degree - by high faculty turnover and overdependence upon expatriate personnel, most notably in the areas of science. Many of the most qualified faculty, it is suggested, were required to leave in the early 1980s over problems of a political nature. Because of high attrition, many of the staff are relatively young college graduates with degrees in education and other areas, who lack both the necessary practical experience as teachers and the solid pedagogical background required to be effective as teacher educators. Their effectiveness is further diminished by the inadequate availability of instructional support materials.

The problem of staffing at the RTTIs underscores the larger problem that currently there are no programs in Liberia for advanced University level training in education in such areas as teacher education, or, for that matter, in the critical areas of administration and supervision, curriculum development, educational planning or evaluation. Some 2.1 million dollars have been earmarked for foreign fellowships under the World Bank-4 project. The question must be asked whether such a substantial investment might be better spent in developing an on-going institutional capacity within Liberia for the development of such a capability. In view of the limited in-country capacity for absorbing such high level manpower, consideration should, perhaps, be given to regional development strategies which serve the needs of the larger West African community.

b. Target Group and Selection

The problems of recruitment have been widely documented in the sector assessment and other Government reports and are as equally salient today, if not more so. These constraints have been shaped both by institutional weaknesses at the primary and secondary school levels which contribute to the general uneven quality of academic training received by high school graduates, and by unfavorable socio-economic context beyond the scope of the MOE.

Student selection for both RTTIs is based on a standard entrance examination administered by the West African Examinations Council. Traditionally these two institutes have not attracted the most able candidates, and it has been necessary to readminister the examination on several occasions to arrive at an acceptable quorum of first year students to fill available spaces. The examination, in effect, serves only to eliminate from a limited pool of candidates, those who are the most ineligible.

For years, the low salaries received by teachers has been the most evident disincentive to dissuade the most promising high school graduates, or sufficient numbers of suitable applicants, from entering into the teaching profession. Additionally, MOE fiscal measures initiated in 1982 resulted in a freeze on the hiring of new teachers which placed a substantial number of that year's RTTI graduates in the ranks of the unemployed. This measure was contrary to the previous existing quid pro quo that all graduates would be assured of immediate employment, and thus demonstrated the instability of teaching as a profession.

Two more recent policy initiatives directed at addressing these problems have had oppositional effects. These are the new teacher salary scale, and the installation of student matriculation fees at the RTTIs. To improve the incentive system, Government initiated in July 1986 a new salary scale which provides for a salary of \$2,800 to B Certificate holders (see Appendix II. This incentive, it would seem, was intended to retain practicing qualified teachers. Yet, the imposition of a \$100 annual student fee at the RTTIs risks to further throttle enrollment production.

c. Follow-Up Activities

There is virtually no follow-up activity in the form of refresher courses or supervisory instructional support once graduates enter the field. This is due, on the one hand to budget constraints and the inavailability of transportation, and would also seem to reflect, on the other hand, that the

goal of certification has been achieved once students graduate.

3. Fourth World Bank Project

The World Bank Fourth Education Project Staff Appraisal Report (November 16, 1982), outlines two axes of project support for the improvement of teacher education in Liberia. A five-year, \$2.1 million teacher training component has been designed to upgrade the qualifications of about 2,250 primary school teachers, representing about 35 percent of the teacher workforce, and school supervisors. The funding period is from January 1984 to December 1988. A second project component places emphasis upon reinforcing institutional capacities for the on-going planning and management, and conduct of teacher education between the University of Liberia and the MOE. It is designed to reinforce the role of UL Teachers College in pre-service and in-service education of teachers through the provision of pedagogical materials, staff fellowships, and a limited amount of technical assistance. Program development plans and facilities needs are to be assessed in relation to future plans to establish a new UL campus in Fendell. To assist the MOE in the area of planning and managing teacher education, three M.A. level scholarships are provided in teacher education and guidance.

In-service training is provided to practicing teachers who are at least high school graduates through contractual agreement with the Education Division of the Cuttington University College (CUC), and the Teachers College of the University of Liberia (UL). The program requires participation in two eight-week seminars conducted during consecutive annual January/February school vacation periods at the Universities and the two Rural Teacher Training Institutes at Kakata and Zorzor. This year, training was not conducted at ZRTTI. Formal training is supplemented by one semester of supervised training. Successful completion leads to the awarding of the "C" Certificate, the lowest level of professional certification awarded by the Ministry of Education. To date, 202 teachers have been awarded certification through the UL program, and 160 through CUC.

a. Training Staff

Staff for WB-4 inservice training are drawn from the four participating institutions, discussed above, and from the pool of experienced practicing teachers. A one-day orientation session for the trainers is held just before the start of the program.

b. Target Group and Selection

The target population for the WB-4 initiative is the 2,100 "underqualified" primary school teachers in the Liberian workforce. Selection is conducted by the Ministry of Education. Two concerns have been expressed about the selection process. First, the program does not address the needs of "qualified" teachers who are in need of upgrading. Second, it has been estimated that perhaps as many as 10 to 15 percent of those who have undergone training do not in fact have legitimate high school diplomas. The low entry level skills and competencies of the participants has posed problems in the conduct of the program, most notably in the program coordinated by UL. In its first 1984 cohort, the UL program registered a failure rate, including dropouts and repeaters, of 40 percent, at CUC the rate was nine percent. Production targets and actual production are presented in Tables 4.2 and 4.3.

c. Follow-Up Activities

The WB-4 teacher education project calls for one year of supervised teaching after the completion of formal training. Though the Universities have experienced some problems in funds disbursement, adequate provision has been made for the conduct of this program component through the recruitment of two full-time supervisors and two vehicle operators. There is no provision at this time for refresher training once the participants have attained certification.

4. IEL In-Service Training

In-service training is provided to all teachers and principals in those schools in which the IEL instructional approach is implemented. Orientation is also provided for education officers. Training is scheduled during the school vacation, was initially three weeks, was expanded to four in 1985, and consideration has been given to extending its duration to eight weeks under IEL II. Formal training at a central site, is followed by a semester of two-to-four on-site supervisory visits per month, ending in a one-week follow-up workshop. No certification is awarded after completion of the IEL workshop. This has become an issue for some "underqualified" IEL teachers since they are not able to participate in the WB-4 certification program because both are conducted during the same January/February vacation period.

a. Training Staff

The IEL training staff is comprised of a Training Coordinator, nine Trainers/Instructional Supervisors, and eight

TABLE 4.2

PRODUCTION TARGETS FOR CERTIFICATION
PROGRAMS AT UL AND CUC

	Input	Output
CUC		
1984	225	225
1985	225	225
1986	225	225
1987	225	225
1987	225	225
UL		
1984	500	
1985		500
1986	495	
1987		
1988		495

SOURCE: Fourth World Bank Project Reports

TABLE 4.3

ACTUAL PRODUCTION OF CERTIFIED TEACHERS
AT CUC AND UL, 1984 - 1986

	TEACHERS STARTING TRAINING	TEACHERS COMPLETING YEAR	ATTRITION	TEACHERS COMPLETING PROGRAM	TEACHERS RECEIVING CERTIFICATION
CUC					
1984	218	195	11%		
1985					
1st Year	185	N.A			
2nd Year	195	160	18%	160	N.A
UL					
1984	451	271	40%		
1985					
1st Year	162 ¹	130			
2nd Year	271	247	9%	247	202

¹ 110 Repeaters, 52 New Entrants

SOURCE: Fourth World Bank Project Reports.

Assistant Trainers. Six of the Trainers are full time and were trained by the project staff. Three of the nine are master classroom teachers. Five IEL classroom teachers are employed as Assistant Trainers, and three are Peace Corps Volunteers.

b. Target Group and Selection

The IEL project applies a comprehensive training approach aimed at providing maximum support to classroom instructional activities. Target groups include teachers, principals, vice principals, and district education officers. The four-week orientation for teachers and principals of newly selected schools is designed to acquaint them with the IEL management system, and the techniques and materials used in programmed teaching and programmed learning. A two-week orientation workshop on the IEL management and supervision system is organized for Chief Education Officers. Principals and vice principals receive one week of training to prepare them to perform their role of instructional supervisor in their schools.

While The IEL system was originally intended for use in schools with underqualified teachers, it can be observed that the qualification level of IEL teachers, is on the whole, higher than that of the general teaching force. The percentage of teachers holding either A or B certificates is approximately the same (IEL: 62 percent; general teaching corp: 66 percent), the number there is a significant difference at the lower end where 16 percent of the general teaching corps have less than a high school diploma, while less than two percent of the IEL teachers come from this group. This is largely due to logistical factors such as school accessibility by road and the ability to secure the schoolbuilding for the safeguarding of instructional materials which has resulted in the marginalization of the most unqualified teachers who are to be found in remote rural areas of the country. See Table 4.4.

Teachers are not directly involved in the process whereby their schools are selected for participation in the IEL projects, and are required to participate in IEL training which competes with WB-4 certification program. It is therefore reasonable to assume that there is some variation in the motivation levels of participants. Teachers are a key element in the effectiveness of the IEL approach. They work harder than conventional teachers due to the high level of program structure, they work longer hours, since the IEL system makes full use of instructional time for on-the-task activities, and they are paid no more than other teachers with their qualifications. Of 755 teachers trained since the inception of the IEL training program in 1981, some 170 have requested transfers to conventional schools, representing a

TABLE 4.4

LEVELS OF QUALIFICATION OF IEL TEACHERS

QUALIFICATION	NUMBER OF TEACHERS	PERCENTAGE
BSc. Edu.	11	1.5
A Certificate (Ghana)	3	0.4
B Certificate	187	25.9
C Certificate	227	31.4
H.T.C. (Ghana)	1	0.1
G.T.C (General Teaching Certificate)	4	0.6
CINSTEP (C equivalent)	17	2.4
Math Edu. (UL)	3	0.4
		<u>62.7</u>

Underqualified Teachers

1-3 yrs. College Edu.	13	1.8
G,C.E (Ghana)	10	1.3
High School Certificate	225	31.2
Home Econ. Certificate	6	0.8
Army Volunteer	1	0.1
Under High School	14	1.9
		<u>37.1</u>

SOURCE: IEL Project Supplementation Unit

23 percent attrition rate. More detailed information is needed on the teachers who have left the project to determine whether they are underqualified teachers, who have opted for the WB-4 certification program, or qualified teachers, who are uncomfortable with the programmed learn-approach, or who resent the extra work involved.

c. Follow-up Activities.

IEL training is followed by instructional supervision and on-the-job training intended to ensure that skills acquired in the training sessions are maintained. Supervisory activities are conducted by IEL Instructional supervisors based in five regional sites in Monrovia, Gbarnga, Sanniquellie, Voinjama, and Zwerdu. Teachers who have been trained receive from two to three visits from supervisors during their first year in IEL schools. Follow-up training is organized to provide remedial or reinforcement training to principals and teachers who have participated in formal workshops.

Comparative Program Analysis

In the following section, a comparative analysis is presented on the objectives, program components and curricula, and the internal efficiency of Liberian teacher education programs. The analysis is conducted at three levels which group four-year, two-year, and short-term inservice programs.

1. Objectives

a. University Level Programs

The central objective for both the UL Teachers College and the CUC Education Division is to prepare candidates for positions as qualified elementary and secondary school teachers. Both programs are characterized by an educational tradition which equates the notion of "qualification" with that of "certification." Thus, program objectives are closely tied to coverage of specific content areas leading to certificates and diplomas prescribed by the MOE Board of Certification and specified in its Handbook of Policies and Procedures for Certification of Educational Personnel in the Republic of Liberia, (in March 1982). The formulation of instructional objectives as outcomes is not sufficiently clear to determine to what extent they are effectively operationalized in training programs.

The Cuttington University College Bulletin provides the following statement of objectives for its Education Division:

The Education Division prepares individuals for professional service in the country's educational system.

It is the starting point for careers in teaching, administration, supervision, counselling, curriculum development, research, school librarianship, teacher education, educational planning, and other professional roles. The Division seeks to develop knowledge and skills around important issues and problems in Liberian and African educational development.

b. Rural Teacher Training Institutes

As implied in their name, the RTTIs were originally intended to respond to the need for elementary and junior high school teachers in rural areas of Liberia. This objective has recently shifted to preparation toward the Grade B Certificate required for junior high school instruction. A secondary objective has been to strengthen the individual academic training of students. This is clear from the Rational for ZRTTI Catalog and Course Outline :

The rationale of the rural teacher training institutes curriculum has been to enable students to "learn how to learn." The curriculum recognizes that candidates who seek admission into the program are students who can not normally gain admission to higher institutions such as the University of Liberia or the Cuttington University College as such it has laid down the content to be taught, and objectives to be achieved to supplement the high school curriculum. However, the procedure for achieving these objectives has been the responsibility of each institute which invariably affects the curriculum.

c. In-Service Training

The USAID/IEL and WB-4 in-service programs are designed to provide a complement of practical skills training to teachers though they differ considerably in their objectives and methods. The general objective of IEL training is to prepare teachers and other key personnel to employ empirically developed materials and techniques. Under the WB-4 project, practical training is combined with courses in foundations and pedagogy required for C level certification.

The general stated objectives of the WB-4 certification program conducted by Cuttington University College are:

1. develop the cognitive skills of participants;
2. develop relevant skills including psycho-motor ability;
3. encourage the development and expression of

feelings and affective behaviors relevant to effective teaching and learning;

4. acquaint participants with, and help them articulate the need for in-service education;
5. develop a sense of commitment within participants to resolving problems encountered in teaching at the elementary school level.

The CUC in-service program curriculum guide describes its philosophy as a "hands on, make it, take it, and use it philosophy." It states that a central objective is to involve practitioners in developing their own instructional materials and aids as models which can be adopted to changing needs and circumstances encountered in their teaching environments.

At the level of their objectives, it can be observed that there are points of divergence and areas of complementarity and overlap among these six programs. An essential difference is apparent between IEL and the other five programs in that its training objectives focus primarily on skills transmission, while the others place varying degrees of emphasis upon a more holistic development of the teacher encompassing skills, knowledge building and professional attitudinal development. Between WB-4 and IEL, convergence and complementarity exists in their practical concern with the importance of instructional materials. Both are concerned with optimal utilization of existing resources. The most apparent area of overlap exists between the four pre-service programs, each striving to impact upon the professional and academic preparation of teacher candidates.

2. Curricula and Program Components

a. University Level Programs

The curricula for the four-year education programs of CUC and UL are presented in Exhibits 4, 5, and 6 in Appendix II. The major weakness of both programs, from the view of the Ministry of Education and other Liberian educators, is that insufficient time is devoted to instruction in content areas to produce teachers who are proficient in teaching their subjects. A Summary of Teachers College Credit Hour Requirements shows that of 128 credit hours required for graduation, education majors are required to take an average of only 30 hours in the major field, i.e., area of content specialization. At CUC only 24 credit hours out of a total of 130 is spent on the major subject area (Teaching Field and Instructional Materials). Teachers College administrators are

currently considering a plan to extend the length of the program by an additional semester for supplementary specialization area training. Such a proposal would not be expected to find much support among students in view of the fact that students in the academic departments of the University can successfully find employment as teachers after four years of training without any professional training. Another option which is being considered by the administration is to create a certification program for non-education major students. But for such a program to be effective, the Ministry would need to strictly enforce its certification standards.

The strength of the University programs would appear to lie in their emphasis on educational foundations and methods, and the general liberal arts instruction provided in general studies. In view of the limited number of graduates who actually enter the field of education as teachers, it would appear that the professional training is wasted and that it is their liberal arts training which provides the widest range of employment opportunities upon completion of their studies. See Table 4.5 for distribution of majors.

b. Rural Teacher Training Institutes

The two RTTIs follow a common curriculum with some minor variation. The official curriculum for RTTIs prescribes that eleven subjects be offered during a semester. These include, mathematics, science, social studies, language arts, history of education, psychology, general methods, instructional aids, classroom management, testing and evaluation, foundation of curriculum, and student teaching. The ZRTTI utilizes a credit hour system in the specification of course requirements as part of its campaign to facilitate the direct transfer of its students into Universities. The curriculum is assessed as 60 percent methods and education and 40 percent content area specialization. As in the case of the Universities, the view of the Ministry is that this ratio should be reversed to place greater emphasis on the development of content area competence.

c. Inservice Programs

In their general orientations, the weakness of the IEL program is that the scope of training covers only the narrow band of competencies required for project implementation, while the spectrum of knowledge and skills covered by the WB-4 initiative have been too broad. The basic components of the WB-4 CINSTEP program and description of the program covered during the IEL teachers workshop are presented in Exhibits 7 and 8 of Appendix II.

TABLE 4.5

DISTRIBUTION OF ENROLLMENT TO MAJOR TEACHING SUBJECTS
CLASSIFICATION AND SEX AT TEACHERS COLLEGE

First Semester 1984

Major	Freshman			Sophomore			Junior			Senior			Total
	M	F	T	M	F	T	M	F	T	M	F	T	
Secondary Educ.													
English	11	2	13	9	4	13	5	5	5	10	0	10	41
History	6	3	9	8	0	8	6	3	9	4	2	6	32
Hist/Govt.	2	0	2	2	0	2	7	1	8	10	0	10	22
Geography	5	0	5	3	0	3	8	0	8	6	0	6	22
Math	13	0	13	15	0	15	1	0	1	7	1	8	37
Physics	0	0	0	1	0	1	0	0	0	0	0	0	1
Chemistry	0	0	0	1	0	1	1	0	1	0	0	0	2
Agriculture	9	0	9	7	0	7	2	0	2	5	0	5	23
Sub-total	46	5	51	46	4	51	28	6	34	42	3	45	162
Elementary Educ.													
Lang/Arts/Soc.	0	3	3	1	2	3	1	4	5	0	6	6	17
Math/Sci.	0	0	0	1	0	1	0	0	0	2	1	3	4
Sub-total	0	3	3	2	1	4	1	4	5	2	7	9	21
Grand Total	46	8	54	48	7	55	29	10	39	44	10	54	203

The WB-4 in-service program would acquire greater classroom relevance if it were systematically and programmatically coordinated with the official textbooks to be used at the different grade levels. This, however, does not appear to be the case. During the 1986 second cycle workshop, textbooks were not available to the UL training staff for use in the instructional methods component. A limited, incomplete range of textbooks were used during the 1985 training cycle, but it does not appear that they were completely integrated into the program, nor that instruction in their use was extensive. The inadequate coordination between the WB-4 emphasis on textbook based instruction in classrooms, and the preparation of teachers to utilize these materials is a critical weakness of the WB-4 project. As is the case with institutions of higher learning, the emphasis and thus the strength of the program, resides in the "human potential development" of the teacher as an individual who will be capable of responding to a wide range of problems and contingencies within a larger socio-psychological environment.

The environmental contingencies of the IEL teacher, as conceived by the training program designers, is the classroom, and the focus of instruction is on the mastery of an instructional system and its related techniques. IEL, however, is not merely skills training. Although educational psychology is not presented as a subject in training, it does appear that the most salient principles of psychology are integrated into training in the form of intervention strategies. Trainees are taught, for example, how to encourage the more timid children in a classroom to participate, to stimulate motivation, to create positive environments free of negative reinforcement and reproach, etc. Nevertheless, cognizant of the programs limitations, the training program has been redesigned to and expanded to eight weeks to include a second component offering a wider range of topic areas in educational foundations.

3. Internal Efficiency

It can be observed, generally, that throughout the sector and at all levels, the internal efficiency of teacher education programs is low. And, in the case of pre-service programs, this observation represents but a point in a historical process of institutional decline characterized by inadequate capacity utilization, and increasingly diminishing economies of scale.

At the higher education level, the data show that in 1984, 162 students were enrolled in the UL Teachers College Secondary Education program, and only 21 in Elementary Education. At such a low level of utilization, Government support for the continued operation of the program must be

seriously considered.

At the level of two year institutions, it was noted at the time of the 1983 sector assessment that the internal efficiency of these institutions was low, but it has since further declined. The number of places at KRTTI and ZRTTI is respectively 410 and 630. As indicated in Table 4.1, the number of graduates in 1985 was respectively 71 and 17, for a total of 88. Viewed from the historical period of the past ten years, a pattern of decline is apparent: the number of graduates numbered 310 in 1978, 249 in 1981, and 88 in 1986. Clearly, these figures reflect problems associated with the general economic deterioration. Although precise enrollment data were not available at the time of this study, it is likely that these data reflect declining enrollments and extremely low student/teacher ratios.

At the level of in-service programs, attrition has been a serious problem in both the WB-4 and IEL teacher training initiatives. Table 4.2 shows the production targets for the CUC and UL World Bank funded inservice training efforts. As shown in Table 4.2, the 1985 production target was 500 newly certified teachers from the University of Liberia, and 225 from the Cuttington University College, producing a total of 725 Grade "C" certified teachers. Table 4.3, showing actual production levels, indicates that 247 were produced from the University of Liberia (only 202 have actually been certified), 160 from the CINSTEP program of CUC, totalling some 407, representing cumulatively only 56 percent of the target goal. At the UL Teachers College, there was only a 60 percent success rate of 1984 students passing to the second cycle of training in 1985. The completion rate in 1985 of students who started in 1984 is only 56 percent. At the Cuttington University College, the statistics are somewhat more positive. Of 218 students who entered the inservice program in 1984, some 160 successfully completed the program, representing a 73 percent success rate, and 71 percent of the target goal.

In the IEL training program, internal efficiency cannot be measured by the same indicators, since the objective of the training program is to bring teachers to a minimum level of mastery of methods and techniques required for project implementation. The objective is that all teachers should attain this level, and there are no failures. In considering attrition, one can only consider dropouts to be the number of teachers who request transfers from IEL schools after successful completion of training. To date, of 755 teachers trained in IEL methodology, 585 are still practicing in IEL schools, and 170 have been transferred to other schools, representing a 22 percent attrition rate.

4. Integration Strategy

The proposed strategy for unifying Liberian Teacher Education into a more effective and efficient system addresses three major purposes. These are:

- Prepare all elementary school teachers to implement the new unified Liberian program of instruction.
- Lend support to the Government priority of upgrading the qualifications of teachers.
- Strengthen institutional capacity for the continued development and improvement of teacher education.

a. Target Audience for Training

The proposed Unified in-service Teacher Education Program (UNISTEP) is a comprehensive training effort directed toward the entire professional corps of practicing primary school teachers. This population of 3,126 teachers is sub-divided into four target groups for which different strategies have been devised. The specific target groups who will benefit from the UNISTEP program are:

-- Qualified Teachers with IEL Training - includes 487 teachers who have received IEL training and have at least a "C" certificate, and who will need only to receive training in Mastery Learning principles (A-1) for one week;

-- Qualified Teachers without IEL Training - includes 88 teachers who will receive training in both Mastery Learning (A-1) and IEL principles (A-2) for a total of five weeks of training;

-- Unqualified Teachers without IEL Training - includes 1483 persons who will require Mastery Learning Training, IEL training, and the World Bank certification program; and

-- Supervisor - eighty professionals, of whom about twenty have received IEL training and will require only Mastery Learning (A-1) training and sixty who will require training in A-1 and A-2.

This data is summarized in the following chart:

	Qualified teachers	Unqualified teachers	Total teachers	Super- visors
With IEL Training	487 will require A-1	268 will need A-1 & B-1	755	20 A-1
Without IEL Training	888 will require A-1 & A-2	1483 will need A-1, A-2, B-2	2371	60 A-1, A-2
Total	1375	1751	3126	80

b. Types of Training

To effectively respond to the needs of the Liberian teacher corps, three training courses have been developed which, when implemented, will result in an improved level of teacher qualifications, and a more uniform degree of professional competence throughout the teaching corps. Clearly, Liberian pupils will be the immediate and most direct beneficiaries of UNISTEP. The three types of training which will contribute to this goal are described below. Table 4.6 identifies participants by category of training.

Training Package A-1

The A-1 package will provide training in the application of Mastery Learning Strategies (MLS) described in Section III of this report. It will last for one week and will include the topics of mastery learning concepts, objectives, formative evaluation concepts and procedures, feedback procedures, and the relationship of mastery learning to grading practices.

Training Package A-2

This package will be directed toward training in IEL procedures, concepts, classroom management, direct instruction, lesson presentation, review sessions, record keeping, upgrading materials, integration of test materials, group activities, etc. Training will last for four weeks.

Training Package B-1

Training package B-1 is the term used to designate the current World Bank funded in-service training program for teachers leading to the "C" level certificate. The program consists of two eight week sessions conducted over two consecutive years, with one semester of supervised teaching.

Table 4.6

Participants by Category of Training

A-1	A-2	A-3
Mastery Learning Strategies	IEL	Certification
3126	2371	1751

c. Possible Uses of Radio

Consideration should be given to the possible uses of radio to support teacher training. School-based courses, combining texts, radio programs, and strong involvement of the school principals, is an attractive, feasible, low-cost alternative or supplement, to centralized training. Following A-1 and A-2 training, the teachers could receive further training in important subjects through carefully designed courses in formative evaluation, school psychology, and related subjects. Radio should also be considered as a vehicle for strengthening teacher proficiency in subject matter areas. Appropriately designed, semi-programmed instructional guides, supported by radio programs can help to expand the materials, motivate teachers, and establish a common pace for participating teachers. Carefully designed and regionally administered tests could be used to certify results, which could be used as "credits" toward certification.

d. Training Streams

To achieve the objective of a unified instructional program in all primary schools it is proposed that training be conducted in two streams to accommodate the training needs of both qualified and underqualified teachers practicing within

the Liberian public educational system. Stream 1, for qualified teachers will likely require a mix of central site workshops and seminars, school-based, on-the-job training, and improved supervision. Training will be conducted by those MOE staff who previously served as IEL instructional super-visors and trainers. Stream 2, for unqualified teachers, will require expanding the present World Bank funded certification program by supplementing it with the PL/PT training package developed under IEL, and with the Mastery Learning Strategies (MLS) training component to be developed.

e. Staffing

Training in PT/PL for teachers in Streams 1 and 2 will be conducted by the staff of the former IEL implementation unit who have successfully taught these methods to some 755 teachers during the initial phase of that project. It is anticipated that technical assistance will be required for the development of MLS instructional support materials and for the conduct of this training component at the certification training sites. It is therefore recommended that a Teacher Education Specialist be engaged for the first four years of the project. The terms of reference for this resident technical advisor will include the training of teacher trainees for both Streams 1 and 2, and supervisory and evaluation follow-up activities. It is also expected that the specialist will contribute to the instructional programs at the base institutions, and provide technical assistance at the MOE.

f. Management and Monitoring

It is further recommended that the unified teacher training program (UNISTEP) be fully integrated into the MOE Division of Teacher Education, to centralize all planning, implementation, and monitoring activities associated with the training of public primary school teachers. The responsibilities and resources presently assigned to the IEL project unit would be transferred to the Teacher Training Division.

g. Implementation Phase-in

The phase-in of UNISTEP must be planned to parallel the implementation of the unified instructional program in the 830 primary schools. That implementation schedule calls for bringing on-line 220 school in 1988, and 250 schools over each of the two following years, requiring the training of about 920 teachers per year. To attain the objective of a uniform level of teacher competency, and a minimum standard of qualification for all primary school teachers, it is

equally critical that UNISTEP be scheduled in tandem with the certification program of the Fourth World Bank project. Training sessions are therefore scheduled to occur during the January/February school vacation periods. The phasing schedule is shown in Table 4.7 below.

Table 4.7

Number of Teachers to be Trained by Year
Through the UNISTEP Program

		1988	1989	1990
A-1	IEL teachers	585	900	641
	New teachers	920		
	Supervisors	80		
A-2	Teachers	920	900	611
	Supervisors	60		
B-2		362	768 1st yr IEL	768 2nd yr IEL

h. Five Critical Steps Required for Implementation

-- Policy Paper. A teacher education policy paper should be prepared for the Ministry of Education for presentation to the National Board of Certification. The paper should present the rationale for the inclusion of the instructional unit A-2 (instruction in PT/PL and Mastery Learning) as a certification requirement for all Liberian primary school teachers. The paper should also contain course content outlines for the the PT/PL and MLS components.

-- Course Outline Approval. Before any of the following implementation steps can proceed formal approval of the training course outline should have been obtained from the Board of Certification.

-- Course Development. Subsequent to the transmittal of course approval from the Board of Certification, development should begin on the design of the second component of the unified instructional program, the Mastery Learning Strategies. This task will involve the development of course

syllabi, a teacher guide, and instructional support materials for a two-week training session. If the integration effort is to make use of the forward motion of the certification program, and maintain the implementation schedule presented earlier, the course development stage must be completed and all materials prepared for distribution for the January 1988 school vacation period.

-- Technical Assistance Requirements for First Year.
Upon completion of the course design stage, central-site training will need to be planned and implemented in two phases. The first phase will group IEL teachers and non-IEL teachers for A-2 training. Those formerly trained under IEL will require only two weeks of supplementary training in MLS. Those who have not benefitted from IEL training will require an additional four weeks of instruction in PT/PL methodology. This group will begin its training four weeks earlier, and be joined at the end of the first component by IEL teachers arriving for the MLS training. The second level of training will occur at the locations of the World Bank funded certification program. Technical assistance will again be critical at this stage in the planning, coordination, and implementation of these activities.

V. Local Supervision and School Support

Introduction

The supervision and teacher support component of primary education in Liberia is a crucial area of the national education system. Personnel in this area are expected to be familiar with, understand and have the capability to implement all aspects of the system. They must also have the ability to articulate educational policies, guidelines and projects; supervise program implementation; provide feedback on observed teachers' performance; provide supportive measures to principals and teachers; assess the appropriateness of educational materials; and, recommend strategies for educational improvement and/or areas requiring further clarification and training.

Supervision involves the following general areas: (a) educational administration, (b) instructional supervision, (c) personnel administration, (d) community relations and interaction.

Since personnel of the supervisory service are responsible for supervising the overall administrative and instructional components of the Liberian National Education System, staffing for this area must be conducted very carefully. The success of the National Education System depends to a considerable extent on what happens in the field. Supervisory personnel have responsibilities for the field operations and activities.

The Ministry of Education (MOE) has exerted tremendous effort to upgrade the calibre of the personnel for the supervisory unit by establishing minimum qualification requirements for personnel at the following levels:

Regional Supervisors:	MA, MA, BSC
Chief Education Officers	BA, BSC
District Education Officers	BA, BSC

Scholarships, funded by the Ministry of Education, and Fellowships, funded by the donor organizations, have been utilized to train staff personnel of the supervisory system. Additional training and orientation have been provided through annual workshops involving supervisors (at all levels), and including selected principals and teachers. The most recent workshop for supervisors was conducted by the University of Liberia, under contractual arrangements with the Ministry of Education in 1984.

Further efforts by the Ministry of Education to upgrade and improve the education system include: implementation of a decentralization scheme by establishing and staffing three Regional Supervisory Centers located in Paynesville, Gbarnga

and Zwedru; increasing availability and accessibility to textbooks for 830 public schools (See Chapter III) in five basic areas - language arts, reading, natural science, social studies and mathematics; and, experimentation with an innovative effective approach to primary education (IEL) which is currently being used in 109 primary schools.

However, in spite of these efforts, which should have had positive effects on the quality of instruction, the attainment of the much desired goal of a uniform national educational program of quality remains elusive.

The present status of supervision and teacher support is cause for serious concern. Officials in the Ministry have reiterated their concerns about this service, most concretely through an evaluation of personnel of the Supervisory System (see Appendices IV and V) applying the minimum academic certification as one criterion for continuing in the system. Personnel who do not meet the required standards are replaced and recommended for institutionalized education/training under the Ministry's inservice training program.

This evaluation is a first step in an attempt to improve the supervisory system. Other strategies for providing effective supervision and teacher support need to be developed. The financial constraints which are being experienced nation wide will not disappear. Prevailing inadequacies of materials and other support for education programs will not be reversed immediately - therefore, a more versatile system for supervision and teacher support is essential for the Liberian situation.

1. Existing Organization and Structure of Supervisory Services

Brief History

The supervisory aspect of educational administration is not a recent development in the Liberian system. Prior to the creation of the political sub-divisions now called counties, the Ministry of Education (previously referred to as the Department of Education) appointed "Supervising Teachers" who were responsible for the administrative operations of the schools into Western, Central and Eastern Provinces.

As the national government assumed more responsibility for the fiscal and administrative operations of education, and awareness developed that education is an instrument of national unity and stability, a highly centralized system of education developed, characterized by decision making and authority, vested in the Monrovia based Ministry.

The 1978 National Education Conference concluded that the resulting over-centralization was inhibiting local initiative and that the absence of defined areas of responsibilities among education units has resulted in widespread indifference and loss of a sense of direction. With the advocacy of decentralization, the Monrovia Consolidated School System (MCSS - created in the 1960's), was advanced as a possible model for consideration.

The Ministry subsequently implemented a program of decentralization by subdividing the national system into three regions; South western, North central, and Southeastern, staffed by supervisory personnel with some administrative and semi-fiscal responsibilities for the operations of schools within their geographic areas of assignment.

Construction of the Regional Education Supervision Centers at Paynesville (near Monrovia), Gbarnga and Zwedru was funded under the World Bank Fourth Education Loan, further facilitating the national decentralization program.

It was anticipated that this initial phase of decentralization would contribute to the effective and efficient functioning of the school supervision system, and result in improved instructional quality. It does not appear at the present that this expectation has been met, however. The supervisory system was also expected to serve as a communications and administrative link between the Ministry and the local communities and schools.

2. Regional and County Organization

The three Regional Supervision Centers that have been established by the MOE are distributed as follows:

- South western Region with headquarters located in Paynesville and is responsible for Grand Bassa, Bomi, Cape Mount, Margibi, Montserrado and River Cess Counties.
- North central Region with headquarters in Gbarnga includes Bong, Lofa and Nimba counties.
- South eastern Region with headquarters in Zwedru includes Grand Gedeh, Grand Kru, Maryland and Sinoe counties.

The Regional Offices are now occupied and presumably operating according to the guidelines established in the Handbook for General Supervision which spells out the lines of communication, scope of work, and areas of responsibility at the national, regional, county, district and school levels. The

supervisory officers are accountable to the Assistant Minister for General Supervision and Instruction who in turn is accountable to the Deputy Minister for Instruction (see Appendix V for job descriptions of supervisors, senior regional officer, county education and district education officers).

There is one Regional Officer for each of the three Regions respectively and one County Education officer for each county. The number of District Officers is a function of the number of districts in the county.

In addition to their involvement in educational planning, supervisory personnel are expected to administer all educational activities of the school within the region ensuring the maintenance of the prescribed educational standards, providing the links between headquarters administration and other supervisory personnel for the purposes of communications, logistical and program support, evaluation, budget preparation and administration of schools.

Included among the specific tasks incorporated in this general statement of responsibilities is a program of regular school visitation for interaction with principals, teachers and students, observation of classes, evaluation of teacher performance and conduct of followup conferences with the respective teacher(s) and principal(s). Unfortunately, this professional aspect of supervision is seldom implemented. This means that possible strengthening of classroom activities through instructional supervision has not been achieved and continues to be a weak area of the system.

Supervision of schools is currently being limited to a "trouble-shooting" approach of investigations and resolutions of "crises" or a cursory inspection of schools to ascertain attendance of teachers. Teacher support, including improvement of teaching strategies, suggestions for classroom discipline, and adequate use of instructional materials, development and maintenance of teacher morale is not a normal activity or concern of supervisors.

Staffing for the Regional County and District Education Supervisory Units incorporates Senior Regional Supervisors, County Education Officers, and District Education Officers.

Following are the personnel responsible for supervisions:

Deputy Minister/Instruction	1
Assistant Minister/Gen'l Supervision	1
Senior Regional Supervisors	3
County Education Officers	13

District Education Officers	46
Special Supervisors/Adult Education	13
TOTAL	77

Other programs included in the Department of Instruction that also utilize coordinators and/or supervisors are: Teacher Education (considered in Chapter IV); Pre-Primary Education; Community Schools; Religious Education; and, School Feeding Programs.

The scope and nature of the national education supervisory system prescribes the level and variety of support required for optimum operations/functioning of the system. The Ministry's expectations that supervision will stimulate positive changes in the quality of instruction, the performance of the principals and teachers and will upgrade the general administration of the schools, increases the necessity that the system fulfills the purposes for which it was established.

However, without proper support to carry out their responsibilities, the supervisory system finds itself in a difficult situation. Without vehicles mobility is impossible. Distances between areas to be covered require some form of transportation (presently only the North central Senior Regional Supervisor has succeeded in purchasing 11 vehicles for the Regional Offices).

The instructional supervisory aspect of the system which is most critical is seldom if ever implemented (as noted above). Limited staffing, time constraints, lack of textbooks, guidelines and instruments to record and interpret classroom observations have inhibited actualization of this crucial component of supervision.

In addition to the supply of appropriate texts and other instructional supplies, supervisors require special training in curriculum concerning the content and teaching strategies utilized in the classroom. Office equipment and supplies are almost non-existent, further hampering the functions of the supervisory system.

Presently the organizational structure of the MOE does not provide for a coordinating center (Unit) with responsibility for primary schools. Programs and services for this level are splintered and coordinated by several sections: the IEL Project; World Bank Textbooks Unit; The Curriculum Development and Textbook Writing Division; and the General Supervisory System (which spans all levels - Pre-Primary, Primary, Junior and Senior High schools). Each of these units is affected by limited funding and lack of other resources to facilitate their operations. The need to reorganize these

programs and services so that activities relating to primary education can become more functional and of higher standards cannot be overemphasized. Additionally, new approaches must be devised to provide support to teachers and increase the effectiveness of supervision.

3. Training

The MOE operates two types of training programs for its personnel. One is an institutionalized program carried out either at local institutions of higher learning through MOE funded scholarships or through foreign training funded by fellowships from donor governments or organizations. For example, under the Fourth World Bank Education Project (WBEP), twelve fellowships at the Master's level were provided for programs in educational supervision at U.S. Universities.

The second type - in-service training - normally has been conducted during the annual school vacation period (January and February) by MOE. Personnel participating in such workshops usually include the three levels of supervisors (regional, county and district), and principals and teachers. Content of the presentations vary according to the MOE's priorities with respect to what areas it wants to emphasize at any particular workshop.

The most extensive recent workshop was conducted by the Division of Continuing Education/University of Liberia through contractual arrangements with the MOE and funded under the Fourth WBEP. The theme of the workshop was "Improved Instructional Systems" and stressed: Educational Administration. Forty-two supervisory personnel, nineteen Principals, two Vice-Principals and eight observers from MOE attended. The workshop was conducted three times for one week each in Monrovia, Gbargna and Zwedru and was regarded by many participants as one of the best they had ever been involved with, even though they felt that the time allocated was insufficient. Unfortunately, the lack of funding has prevented implementation of a follow-up workshop.

There is an urgent need to plan short-term workshops designed to improve the performance of the supervisory personnel, especially since they have responsibility for maintaining or increasing levels of instructional quality in the field. With the implementation of the new LPEP, short term and long term training orientation for supervisors and other personnel will have to be conducted.

4. The IEL Supervisory Structure and Operations

The general responsibility for supervision of school falls within the purview of the Bureau of General Supervision and

Instruction and the actual supervisory activities are performed by personnel of the Regional Offices on the county or district levels, as has been explained. But there is one special exception to this organization. The IEL system has developed its own corps of trained Instructional Supervisors/Teacher Trainers whose job responsibilities are similar to those of the normal Supervisory personnel.

The existence of this group derives from the nature of the IEL project. IEL's initial location in Gbarnga (Bong County) outside the existing "physical" facilities of the MOE, its programmatic developments and requirements for staff development to facilitate trials, evaluation and revision of the experimental materials, its desire to maintain control over staff development and school operation during the critical first phase of the Project, all lead to the development of a separate supervisory unit.

Despite periodic involvement with Regional, County and District Supervisors, IEL training and supervisory systems are operating independently, with their staff accountable to IEL Project personnel, specifically the IEL Implementation Unit.

Staff of the IEL Implementation Unit include ten full time people who serve in a dual capacity as instructional supervisors and teacher trainers. This figure has been increased by utilizing two Peace Corps Volunteers and seven regular classroom teachers who have received special training and are regarded as assistant teacher trainers. 119 Primary School Principals and 22 Education Officers have also been trained and/or given an orientation to the IEL system. The distribution of schools, supervisors, assistants, etc is shown in Table 5.1.

The IEL supervision system increases the possibility that teachers attend their work (reduced absences), and that children do have access to materials, and that record keeping is somewhat better. The IEL supervision includes considerable teacher support as well as training.

IEL has an organized professional approach to supervision which includes: the development of well designed guidelines for supervision; instruments to be utilized during school/class visitations, with immediate feedback and discussions of the observations openly shared with the teachers and/or principals; supervision scheduled which are reasonably well adhered to; distribution of materials and supplies handled by the supervisors; maintenance of good communications between schools and the Implementation Unit; and a system for regular reporting and meetings to reduce the necessity of crisis

TABLE 5.1

Coordinator/Supervisor/Head of Implementation Unit

Site	Included	No. of Schools	No. of Sessions AM/PM **	No. of Supervisors	No of Assistants
Monrovia	Kontserrado	6	10	1	-
	Grand Bassa	5	5	1	-
	Cape Mount	4	4	1	1
	Margibi	5	5		-
	Lower Lofa	5	5		1
	Bomi	6	6		-
Gbarnga	Bong	21	23	1	
Voinjama	Upper Lofa	22	22	1	-
Sanniquelle	Nimba	15	15	1	-
Zwedru	Grand Gedeh	<u>19</u>	<u>19</u>	<u>1</u>	-
TOTALS		<u>109</u>	<u>114</u>	<u>7</u>	<u>2</u>

** A (Sessions: A school may operate 2 sessions with two different set of students -
 AM - 7:30 - 12:30
 PM - 1:30 - 5:30

*** B Assistants refer to the 2 Peace Corps Volunteers who are serving as assistant teacher trainers in Cape Mount & Lower Lofa Counties.

oriented field supervision.

The program also has some problems. IEL personnel experience difficulties in maintaining the required school visitation time table of at least once a week because of the quantity of schools each staff person is responsible for and the distances involved. Classroom observations are also limited because of the total number of hours per school day and limited number of personnel to cover the schools. The advantages that could be gained by using trained principals is not maximized. Successful implementation of the supervisory service is too dependent on continuous mobility/use of vehicles. Further, the most highly qualified instructional supervisors (college graduates with experience) feel a need for external evaluation of their performance and express the desire for additional training and education. The use of instructional supervisors who have below a "B" level certification could have negative results on the quality of the service. The monotony of the teaching strategy and control of implementations can reduce the supervisor's acuity during class observations. Attention span, interest, and excitement are adversely affected and there is a need to develop other approaches which utilize resources within the country.

Functioning somewhat isolated from other professional colleagues assigned to similar responsibilities, coupled with an absence of coordination of activities and cooperation between Regional, County and District Supervisory Offices and the IEL Implementation Unit, has resulted in the development of negative feelings toward IEL, and reduced the IEL project's impact, hampering what could be a combined, effective, and competent National Supervisory System.

5. The World Bank Textbook Project

The World Bank Textbook Project is one component of the Fourth Education loan totalling 3.7 million dollars. \$2.1 million of this amount was allocated for the purchase of primary education textbooks (see above, Chapter III). Supervision and support within the project have been directed exclusively toward control of the distribution and sales of the texts. Within the overall project there are three Field Inspectors whose responsibility include visiting all areas where sales agents are located to conduct inventories and determine additional orders. Their work does not include supervision of how the texts are to be used in the classroom and the National Supervisors are minimally involved with the textbook process.

6. Fostering Parent and Community Support

Another dimension of decentralization is the development of

community awareness and the establishment of close relations between the schools(s) and the community. Supervisory personnel, principals and teachers need to re-activate existing local organizations as: Parent-Teachers Associations; a Local School Board; Special Clubs (Agriculture, Home Arts, Science, Literary, Cultural), which could serve as a vehicles to cultivate community involvement and support.

The idea of community involvement and support already exists in the Liberian context. Communities have occasionally coordinated their resources and constructed schools, clinics, markets, sporting facilities, libraries and housing, on a self-help and/or county development basis. There are also instances where field personnel of the Ministry of Education have capitalized on the community as a resource and, for example, with proper planning, using appropriate administrative channels, succeeded in obtaining all of the vehicles required for the North Central Region Supervision Office.

The need to foster closer community school relationships is multidimensional. At one level, the community is informed about how schools operate and their various programs. The relationship can serve as a catalyst in developing dynamic organizations that not only support the schools but also expand their activities by incorporating local/traditional handicrafts and folklore, further enriching the educational program. At another level, the community provides continuous supervision because its members feel responsible for what happens in the school and are informed about how they should be operating.

With proper planning and organization, the community/school relations can be cultivated to the optimum advantage of both partners. After all, schools do provide a valuable service to the community by educating and training the children. Cultivating community interest and support can also be viewed as another means of fulfilling parental (community) expectations through operating the best kind of schools. Local community members that can become involved include political officials, traditional leaders - Chiefs and Elders - and other residents of the community.

Initiating discussions and plans for this approach is not restricted to any level of educational personnel. It only requires someone with interest and drive. However, if the approach is to achieve some nationwide collaboration, then guidelines should be worked out to provide guidance, control, accountability and follow-up.

The following summarizes some benefits that can be achieved by this approach:

a. The community would develop more interest in the schools and feel responsible for their overall operations. This could then be channeled into organizations to work directly with the schools liaising with local principals, teachers and supervisory personnel. One immediate benefit of this might be an increase in the overall enrollment and in the regularity of student attendance.

b. The community organizations could provide vicarious supervision, ensuring that schedules are maintained regularly, that teachers' absences are low, and that programs meet established standards.

c. Support for education would be more substantial because the community will be informed, and included in planning and the decision-making processes. For example, maintenance of the school buildings and grounds could be at least partially assumed by the community.

d. Community leadership can serve in a dual capacity of providing support for education and also serve as leverage at the National level for programs and support. For instance, if parents sympathize with the plight of teachers (irregular salaries, lack of materials, etc) they can petition through local authorities and obtain results much faster and with less difficulty than the teachers themselves.

e. The community would regard the schools as integral components of the community, further increasing its feeling of responsibility for the school's overall operations and success. The school could even become the center for adult education programs to serve desires of community members.

7. Recommendations

The existing National Supervisory System is not providing the quality or level of support to the education system it should be. With the establishment of the new LPEP, short and long term training and orientation programs will have to be undertaken to introduce employees to the new system and its requirements. Programs should be devised to complement the existing supervisory systems, involve school principals and teachers and the community, and provide much needed support to teachers.

Once the design of LPEP is completed it will have to be studied to identify and organize the types, frequencies, and nature of supervisory and support activities which it will require, particularly in the instructional areas, which have classically been neglected in the current system.

One of the main objectives, which should be considered for

supervision and support functions, is to achieve an increased teacher identification with the new LPEP.

Among approaches which should be considered are:

a. Establish Radio Bulletin Boards to post information, remind teachers and principals of information requirements, advise them about support that is available, etc.;

b. Plan and conduct Radio Forums to discuss problems, give advice and ideas. Supervision sessions could be dramatized, so that listening principals and teachers could participate vicariously in and learn from them. Mini-lessons about curriculum, formative evaluation, IEL/text: integration issues could be aired;

c. Use Radio programs to support and stimulate the development of community support for the schools through explanations of support processes, interchange of experiences, stimulation of the formation of local school boards, etc.;

d. Establish clubs or social organizations for teachers, parents and communities which can plan activities that will involve the community in school programs and inform them about the LPEP;

e. Print a monthly newsletter with ideas and support for teachers and principals; and

f. Develop teacher training programs utilizing the distance teaching modality for subjects such as formative evaluation, English proficiency, etc.

New training will be required, particularly in-service, which should be well designed and properly phased and should include supervisory personnel, primary school principals and directors of the pre-primary and community schools programs. The training should be conducted over a three year period, on an in-service basis, during the annual school vacation periods.

A second strategy can involve institutionalized graduate-level training over a period of one to two years at either of the Liberian high education institutions. Teacher assistance will be required to plan and organize the in-service phases of the training, assisted by local resource persons.

Categories and numbers of supervisory personnel, primary school principals and directors of other programs involving primary schools are:

<u>Category</u>	<u>Description</u>
A	Supervisory with professional training in Educational Administration/supervision/General elementary or secondary education
B	Supervisors with college degrees in other disciplines
C	Supervisors with college degrees and trained only in IEL, including PCV's
D	Principals trained in IEL
E	Directors or Preprimary and Community schools

Since the new LPEP will be phased in over a period of three years this will reduce to a manageable size the number involved in training at any one time. Presently there are 830 primary schools, of which 109 are currently using IEL. Over a three year period the number of schools phased in will be 330 the first year (221 plus the existing 109 IEL schools). During the second year, another 250 schools will be included, and the final 250 will be added at the start of the third year.

In-service training will involve 80 supervisors (categories A - C). All Supervisors will receive A-1 training (Mastery Learning Strategies), and approximately 60 supervisors will receive A-2 training (IEL principles and procedures) in 1988 as specified in Chapter IV. Further training in supervision and development of community participation will be provided through two types of training. The first is an in-service approach to be conducted for periods of one to three weeks, over a three year period. The second is an institutionalized approach of training at higher levels (University of Liberia or Cuttington University College) for graduate programs or special studies in area that are necessary for the implementation of LPEP.

A general summary of the training being suggested is shown in Table 5.2, on the following page.

TABLE 5.2

IN-SERVICE TRAINING - YEAR ONE

<u>First Phase</u>	<u>Second Phase</u>	<u>Third Phase</u>	<u>Fourth Phase</u>
<p>All Supervisory Personnel and Primary School Principals will be involved in the first series of In-service Training:</p> <p>±</p> <p>1. Duration: One Week.</p> <p># Involved: 80 Supervisors</p> <p>Site: One Site CUC/UL/KRTTI</p> <p>2. Duration: One Week</p> <p># Involved: 833 Principals & Directors</p> <p>Sites: Three sites involving 1/3 of the group sequentially. The Training staff moves from site to site</p>	<p>Two months following Phase One 27 Supervisors. Three days' training.</p> <p>Identify Supervisors for areas where initial 330 schools are located. This training will be for all supervisors but will coincide with training for Principals at each of the Three Sites.</p> <p>Special sessions for Supervisors and Principals of 330 first integrated schools.</p> <p>Duration: Three Days. 330 Principals/ Directors coincidental with supervisors (27)</p>	<p>Conduct surveys, Radio Forums, Newsletters for reinforcement communications, etc.</p> <p>Local half-day sessions</p> <p>330 Principals One day or half day sessions on a District or Town/City level.</p> <p>Surveys/Radio Forums to discuss problems. share ideas</p>	<p><u>End of First Year</u></p> <p>One Week</p> <p>27 Supervisors (old)</p> <p>27 (New, starting the cycle).</p> <p>. The new 27 Supervisors will be involved with Training at sites with (New) Principals</p> <p>One Week</p> <p>Three Sites</p> <p>330 (Old)</p> <p>. Distribution of Participants determined by school assignments.</p>

VI. Administration and Management

The study team has observed, in a number of instances, evidence that the IEL Division of the Ministry of Education's Department of Instruction enjoys (or suffers) a special status. For several years IEL was a special project, remote from the center of Ministry affairs, and had available to it resources not generally available to other Ministry units. In addition, it was developing a new kind of primary educational program, sometimes controversial, and often not completely understood by many professional educators both within and outside the ministry. IEL was regarded by many as not having much to do with the real world of day-to-day education and was, at times, resented and misunderstood.

The nature of experimental development usually requires that special ad hoc organizations - set apart from the encumbrances of daily operational routine - be created and allowed to operate free of many of the usual bureaucratic requirements. However, in moving from the development research mode to the implementation and operations mode, it is essential that the responsible group be an integral part of the routine organizational operations. This is critical to effecting the shift from "innovation" to "routine practice."

Create a Bureau of Primary Education

The study team recommends that the IEL Project Division cease to exist as such and become the nucleus of a new Bureau of Primary Education (BPE). The BPE should be headed by an Assistant Minister who reports directly to the Deputy Minister for Instruction. Many of the functions now performed by the IEL Division duplicate support services offered elsewhere by the Ministry of Education. In some instances the support services provided by IEL are superior to the equivalent service offered elsewhere, if for no other reason than these latter are often fragmented and diffuse. Doubtless, one of the reasons for IEL's success these past several years is that it had both the responsibility and authority for its school's operations. In large measure, it had comprehensive control over the IEL schools, including project conceptualization, content specification, materials development, definition of teacher roles, supervision, logistical support, and so on.

It is beyond the scope of the present study to determine in detail all that would be entailed by the recommended organizational change. However, it is probable that some support functions presently available in the MOE, and serving all school levels, should be differentiated and assigned to the appropriate operating bureau. For example, it may be prudent to permanently task selected Department and Regional Educa-

tion Officers to specialize and concentrate on primary schools, with others being assigned to secondary or private schools. If this was done the Bureau of Primary Education should probably direct, support, and monitor those supervisors assigned to the primary level schools.

Even for those centralized services which should remain centralized, the linkage between the central Ministry, the District Offices and the local schools needs to be more efficient than it is presently. Some services presently performed by IEL should probably not be continued in the BPE but be shifted to the MOE unit ordinarily responsible for that service. Printing and materials production may be such a case. Figure No.1 shows a possible organizational breakdown for the proposed Bureau of Primary Education with several suggested functions to be performed by its constituent units.

The ultimate specification of functions and organizational form for the Bureau of Primary Education will require a careful organizational analysis but the creation of the BPE need not await the conclusion of this analysis. In any case, the BPE should be organized so that it will have responsibility - and the necessary delegated authority - for the operation, support, and maintenance of the nation's public primary schools. At the same time, it should continue to have the necessary personnel and resources for the special LPEP nationwide implementation. And this latter function should be discharged in the context of an established government unit, which will have continuing responsibility for, and a stake in, the overall success of the new primary education program.

Materials Publication, Storage and Distribution

By the beginning of the sixth project year over ten million pages of printed IEL material will need to have been produced and distributed. This includes the three year cycle replacement for those schools presently using IEL materials and the schools selected for first phase LPEP implementation (Project Year 4). All of this production will need to be completed during Project Years 3, 4, and 5, since it must be available for delivery to the schools before the beginning of the new school year. This projected work load demands serious attention. If locally available printing sources are to be used they will doubtless need advance notice in order to "tool up" for this level of production.

The logistics of publication, distribution, and replacement will need to be carefully planned. It is an integration issue because it may require involvement with MOE units not previously engaged in IEL work. For example, it may be

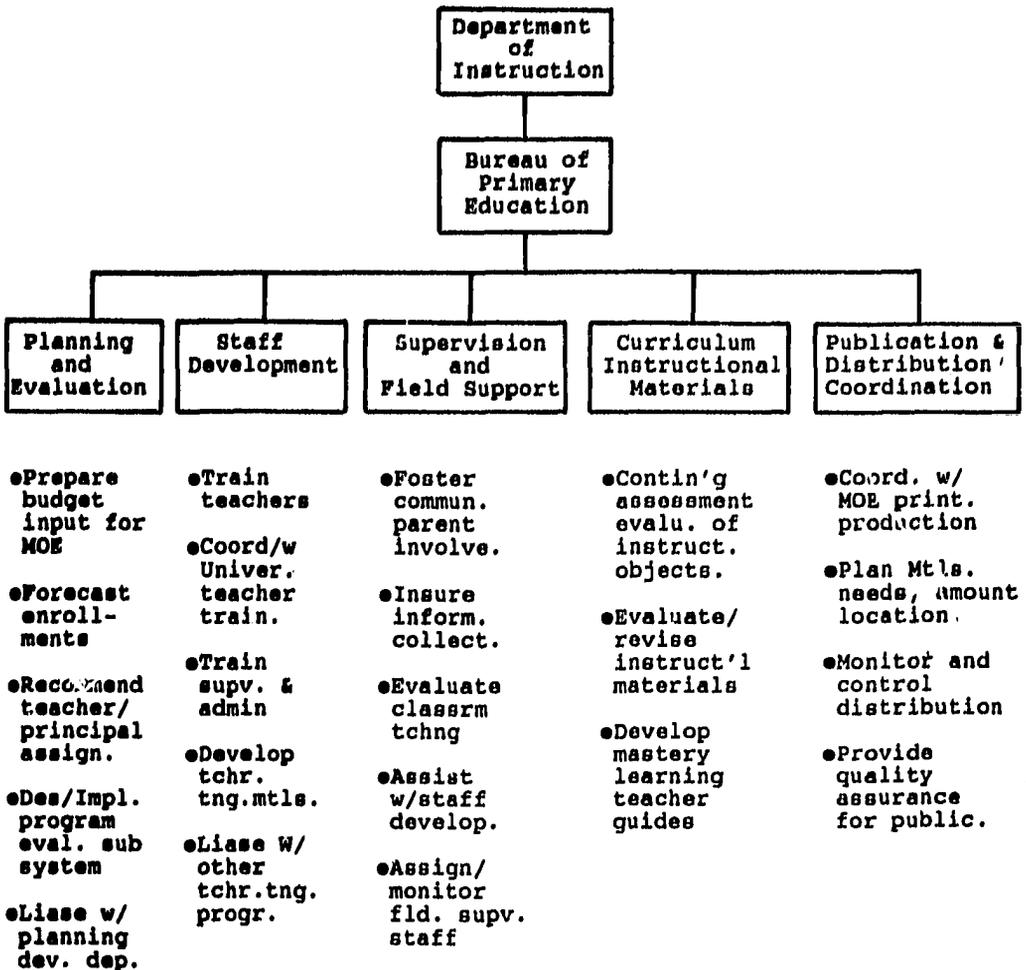


Figure No. 1 Possible organizational structure for the proposed Bureau of Primary Education with some essential unit functions.

better to assign this task to the Printing and Production Division of the Department of Administration rather than expand and strengthen the ad hoc capability now a part of the IEL project.

There are several arguments for procuring the needed publication services locally. It is administratively less cumbersome and allows for more MOE monitoring and control. However, with the quantity of production anticipated, it may be considerably less expensive to have the printing done outside of Liberia, e.g., in Hongkong or Taiwan. The tradeoffs of the various options need to be examined realistically before decisions are locked in. A fundamental question is whether local printers can even handle such a massive production assignment.

Given the exigencies of printing - whether local or offshore - it is probable that the time-span from production completion each year, to school start-up will be relatively short. And it is in this period, however short or long, that all distribution of materials must take place. After printing, and before distribution, the IEL modules must be collated, boxed, and stored. The scope of logistics management for all this should not be underestimated.

Program Monitoring, Evaluation, and Management

There are several elements of information gathering, data storage and analysis, and reporting which require effective integration if these processes are to inform decision-making at the various managerial levels in the Ministry of Education. In addition to feedback on the stages of LPEP implementation, The BPE will need to gather the other kinds of school information that are critical to the MOE's budgeting and planning for resource allocation. This area, probably more than any other, is the keystone to educational efficiency. Accurate reports on enrollments in the individual schools and in the region, are essential if teacher assignments and materials distribution are to conform to actual need, rather than being excessive in some places and deficient in others.

The Ministry's relatively new Division for Information Systems and Data Services (ISDS) is charged with providing information management services to the Ministry. The state of the art, on a world basis, is rapidly evolving in the area of information management, and high-speed, low-cost computers are now affordable by most countries. The ISDS Division has the basic microcomputers it needs, but needs to work interactively with BPE (and other Ministry) staff to inform them as to the range of data the ISDS can process, what uses can be made of the information generated by their analyses, and

what kinds of raw input data they must receive from BPE to provide these services. Technical assistance under IEL II or the "Improving the Efficiency of Educational Systems" (IEES) project could be fruitfully used in helping to identify the data needs by the several levels in the Ministry, for primary education, and helping to systemitize the data gathering forms and processes. Enrollments, class attendance, attrition, achievement data, promotion rates, materials inventory, teacher and principal assignments, school locations, are only some of the dimensions of the educational system about which too little is known.

VII. Cost Implications

A normal budgetary situation exists where government revenues are adequate to cover Government's current expenditures as well as provide a surplus to most part of development expenditures. In Liberia, Government revenues have been inadequate for more than a decade to cover even current expenditures, let alone contribute anything for development. Considering the ever-growing deficit and revenues which have been declining from year-to-year since 1981, the outlook for growth of the Liberian economy is bleak indeed.

Since 1981, the economy has continued to decline at an alarming rate. At that time GOL revenues amounted to \$279.3 million, a modest increase over the 1980/81 figures, but despite major increases in income taxes, the GOL had a deficit that year, amounting to \$117.7 million. During the following years - 1982 and 1983 - and partly as a result of several "austerity" measures, such as a freeze on all government hiring, the GOL managed to reduce some of its recurrent expenditures only to experience another serious revenue/expenditure imbalance in 1984/85 when the combined recurrent and development expenditures caused a budgetary deficit of \$113.2 million.

Though expenditure increases were somewhat held in check during fiscal year 1985/86, GOL revenues fell short of expected levels and again the Liberian economy experienced a serious financial and structural imbalance.

Table 7.1 summarizes the GOL revenues and expenditures for the time period between FY 1980/81 and 1986/87. These data suggest - and our projection is supported by estimates received from GOL-Ministry of Finance officials - that the economic "down-spiraling" effect will continue for several months to come. Unofficial estimates put the amount for recurrent and development expenditures for FY 1987/88 within the range of \$315 and \$325 million, not including debt service.

While there are a number of other major socio-economic problems facing the GOL, undoubtedly the most urgent issue to be solved is the public sector financial crisis flowing from a government revenue/expenditure imbalance.

1. Ministry of Education Budget Constraints

The Liberian "Education Budget", measured by the annual budgetary appropriations to the Ministry of Education and expressed as a percentage of the total government expenditure

TABLE 7.1
GOL Revenue and Expenditures
1980/81 - 1986/87
(in \$ Millions)

	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87 ¹
Revenue²	242.4	279.3	257.4	275.2	314.8	278.6	263.1
Expenditures							
Recurrent	232.8	300.6	265.3	244.4	196.2	205.5	199.6
Development	124.2	96.4	95.8	90.6	113.7	96.3	103.5
Debt Service	-0- ³	-0- ³	-0- ³	-0- ³	118.1	84.7	58.2
Balance	(114.6)	(117.7)	(103.7)	(59.8)	(113.2)	(107.9)	(103.2)

¹ Estimates; Bureau of the Budget, November 1986

² Includes foreign grants

³ Debt Service for 1980/81 through 1983/84 included in Recurrent costs for those years.

TABLE 7.2

NATIONAL BUDGET AND PUBLIC APPROPRIATION
FOR EDUCATION: 1979/80 - 1984/85

	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
1. National Budget	315,279,000	372,500,000	431,100,000	390,600,000	387,000,000	480,000,000
2. Ministry of Education	41,286,761	42,372,544	45,041,083	40,600,143	46,186,651	45,018,571
3. University of Liberia	7,272,455	7,381,254	9,222,362	10,096,508	8,690,683	7,694,483
4. Total Education (2+3)	48,559,216	49,753,798	54,374,445	50,696,651	54,877,334	52,713,054
5. Total Education as % of National Budget	15.4	13.4	12.6	13.0	14.2	11.0

Source: Bureau of the Budget

currently amounts to only eleven percent. This is alarming, since, while not at its peak in FY 1979/80, the Ministry of Education budget nevertheless amounted to almost \$48.6 million, claiming a relatively stable portion of total GOL expenditure - when compared with prior years - at 15.4 percent. Two years later the MOE budget reached an all time high, with appropriations amounting to \$54.4 million (including an appropriation of \$9.2 million for the University of Liberia,) however, as a percentage of GOL revenues the MOE budget dropped to 12.5 percent (See Table 7.2).

This sudden and rather unexpected development (1) will affect not only both recurrent and development expenditures of the MOE but, more important, it will make it increasingly more difficult to forecast whether or not the education sector will maintain a proportion of the GOL Central Budget large enough to support and finance the proposed IEL project.

Available data suggest that all MOE budget projections for the near future will have to be revised drastically. An extremely low level of annual growth of the MOE budget of perhaps only one percent, if not less, is a distinct possibility. Some economic observers are even inclined to predict "sharp reductions" in MOE allocations for the next three to five years. Table 7.3 gives an overview of MOE's budgetary appropriations between FY 1980/81 and 1986/87. As the MOE faces considerable public and political pressure to improve its primary education system, it faces also a very serious challenge in meeting these demands within the fiscal constraints which can be predicted for the near future.

Unofficial estimates made by Ministry of Finance officials are "conservatively optimistic" regarding future budget developments and they suggest that the education sector's share of the total GOL expenditure will remain fairly constant at eleven percent. Other projections obtained from the Bureau of Budget, however, are far more optimistic and suggest that a conservative fiscal approach, if maintained by the GOL, might lead to an accelerated increase in MOE expenditures and a two to three percent annual rate.

Aside from limited community resources and a variety of internal organizational low-cost strategy options, few new real revenue possibilities exist for the MOE. This fact, together with the expected low level of annual growth, will

(1) MOE officials and other Liberian authorities in 1984 projected that MOE's share, as a percent of GOL budget, will remain relatively constant at approximately 17 percent between 1985 and 1995.

TABLE 7.3

MINISTRY OF EDUCATION
BUDGETARY APPROPRIATION

FY Year	Recurrent Expenditure	DEVELOPMENT		Total Development	Grand Total Operating Exp.
		COL	Ext. Ass't		
1980/81	46,211,887	1,759,430	7,391,984	9,151,414	55,363,301
1981/82	51,209,993	3,717,000	4,288,000	8,005,000	59,214,993
1982/83	44,696,501	4,102,000	5,175,000	9,277,000	53,973,501
1983/84	44,091,186	3,593,000	7,000,000	10,593,000	54,684,186
1984/85	44,863,054	1,950,000	5,900,000	7,850,000	52,713,054
1985/86 -					
July - Dec	14,423,449	--	--	--	14,423,449
1985/86 -					
Jan - June	17,260,611	800,000	--	800,000	18,060,611
1986/87	31,986,882	1,800,000	2,350,000	4,150,000	36,136,882

Source: Bureau of the Budget.

undoubtedly constrain the MOE's ability to absorb large recurrent costs. However, as shown below, our analysis of recurrent costs suggests that the MOE has the financial and capacity to insure the absorption of IEL related costs.

2. Effectiveness, Costs, and Rates-of-Return

a. Cost Effects of Improvement in Efficiency. All components, products, and procedures related to the IEL instructional system were repeatedly evaluated and, where appropriate, revised. The majority of evaluation studies undertaken during the past four to five years dealt with the formative or summative evaluation of IEL. These studies were conducted for the purpose of improving the instructional system or, as in the case of summative evaluation, for validating the effectiveness of the IEL instructional system.

As cost-effectiveness has always been a major concern of the IEL project, several cost-effectiveness studies were performed which focussed on the costs of instructional materials and on possible savings in costs associated with teacher training. As part of IEL, Part I evaluation, two additional economic analyses were conducted. The primary purpose of those two studies was to determine cost-benefit relationships and to identify the major issues of internal cost-efficiency. In July of 1983, Dr. S. Thiagarajan, of the Institute for International Research, coordinated a materials cost reduction study with staff members of the IEL project. The two primary purposes of the study were (1) to reduce the costs of the IEL materials and bring them in line with the costs of textbooks, and (2) to do so without any drastic changes in the integrity of the IEL system.

Materials costs were perhaps the most important costs to be considered at this time. However, in the original conceptualization of the IEL project many other cost/benefit considerations had been treated as major factors and Thiagarajan reviewed these considerations. Two excerpts from his comments are provided below (Thiagarajan, 1983).

The Cost of Teacher Training. The critical need that initiated the IEL project is the prohibitively high cost of training all the underqualified and unqualified teachers who constitute the majority in elementary education. If it can be shown that these underqualified and unqualified teachers can produce, with the help of the IEL instructional system, student achievement results comparable to those produced by trained teachers, then a major benefit would have been achieved at a lower cost. Some two years ago, training at KRTEE was conservatively estimated to cost approximately \$5,000 per trainee. This cost has gone up recently.

Teacher Salary Costs. Originally, a major cost saving factor for the IEL system was in the area of teacher salaries. These savings were expected to result from the significant salary differentials between un- and underqualified teachers and the qualified teachers. Such cost savings are unlikely to occur now because of these reasons:

- a. The government has narrowed the gap between the salaries of qualified and un/underqualified teachers;
- b. IEL teachers claim a higher salary because they work harder and produce more learning; and
- c. It is the policy of the MOE to eventually staff all schools with fully qualified teachers.

There are two other ways in which significant teacher salary savings may accrue within the IEL system. A 1982 evaluation study suggested (Harrison and Morgan, 1982):

IEL teachers can handle two or three different grades at the same time. For example, an IEL teacher can handle the first, second, and third grades at the same time (as long as there are not more than 15 children in each grade) using IEL materials. More importantly, children receive instruction appropriate to their grade levels. This is in contrast to the usual practice in which all children are grouped and consequent instruction has to focus on the mean ability of the group.

Also, the IEL materials enable older students and literate volunteer members of the community to conduct instructional activities in the Programmed Teaching and Programmed Learning classrooms. With the mobilization of volunteer personnel, it is possible to further increase the teacher/pupil ratios if the role of a coordinating teacher is assigned to the current IEL teacher and have him or her supervise para-professional instructional aids.

Prior to Thiagarajan's materials cost reduction study, Douglas Windham published four reports based on his cost analysis work for the IEL project (Windham, 1983). The main product of the first report was to itemize the estimated costs for IEL and non-IEL schools in five main areas: teachers' salaries, materials costs, facilities and equipment costs, administrative and supervisor costs, and teacher training costs.

The other three Windham reports dealt with cost effects of potential internal improvements in efficiency and external

economies of scale within the IEL system; a cost-effectiveness comparison of IEL and non-IEL schools, and an analysis of the cost impacts of alternative dissemination strategies.

Soon after completion of the materials cost reduction study, Windham recalculated the costs associated with the IEL materials. In his supplemental report to the IEL cost analysis project, he concluded that the absolute levels of cost reduction are dramatic and the largest cost reductions were made for the PL grade level where class sizes were most likely to be very small. He cautioned, however, that the large number of primary schools with very small class sizes (approximately sixty percent) still presented serious cost problems.

b. Benefit Cost Considerations. To calculate rates of return to educational investment in Liberia is difficult, given the present state of data. Nevertheless, a rate-of-return analysis was conducted for various levels and types of education, and private, as well as total return rates have been calculated by identifying the average direct costs and earnings foregone by students for each level of education. Total costs were subsequently compared to expected increases in the lifetime earnings-stream which might (or might not) result from education, or better, from each additional "unit" of education and/or training. While the actual rates are by no means exact, the relative size of the rates permits a useful interpretation.

The factors used in calculating the rate of return for primary education in Liberia are summarized in Table 7.4. The high rate of return is not unusual for primary education because of the low opportunity costs for a student of the primary grade age level while in school, and the dramatic expectations of earnings gain as a result of primary school graduation. Even if the expected income is reduced by fifty percent, the private return would be in excess of fifty percent per year over the graduate's lifetime. The return to private-plus-government investment in primary education has been calculated to be forty-one percent and while this figure is lower than the private return "there is still a substantial return from combined private and public investment ..." (Report on the 1984 National Policy Conference on Education and Training, p. 84, 1984).

More recently, a benefit cost analysis was conducted, focusing on selected tangible and intangible benefits of the IEL project (IEL II Project Paper). The quantifiable benefits derived from the IEL project were assumed to be: a reduced number of years required to get the average student through the sixth school year - a cost savings to the MOE, and a benefit to the student by allowing him to enter the work force a year earlier than it would be under the current, conventional

TABLE 7.4

RATE OF RETURN ESTIMATES
(IN \$)

PROGRAM LEVEL	PRIMARY EDUCATION
Direct Private Costs	360
Foregone Earnings	240
Total Private Costs	600
Government Subsidy	516
Total Costs	1,116
Average Increased Earnings	1,900
Discount Factor for Employment and Mortality	.75
Private Rate of Return	100%
Total Rate of Return	41%

Source: Final Report of the 1984 National Policy Conference on Education and Training, p. 84 (abridged, extracted from the Education and Training Sector Assessment, April, 1983)

teaching system. Also, it was assumed that the IEL trained students become potentially more productive workers, because they are better prepared in basic educational skills. The analysis concluded that a benefit cost comparison yields a net present value exceeding by far the initial investment when discounted at a social discount rate of ten percent, while the project's internal rate of return came to 19.2 percent (the internal rate of return represents the economic rate of return realized on each dollar's worth of expended resources.)

In the following section an attempt will be made to partially recalculate costs and benefit components which, together with a set of non-monetary assumptions, were used to conduct the cost-benefit analysis referred to above.

The two major forms of monetarized benefits which may be expected to accrue from a future expansion and dissemination of IEL in the Liberian Primary Education Program (LPEP) are: savings which accrue because of IEL's potential to reduce repetition and attrition within the primary education cycle and thus reducing the current high cost per graduate; and the effect of increased educational achievement on school leavers' employment and earnings patterns.

The student/teacher ratio in primary public education is 27:1 at the present time. This suggests a sizeable marginal excess capacity exists which can be used to absorb a significant increase in enrollment without incurring incremental increases in instructional costs.

While longitudinal analyses of attrition for the primary grades are conspicuous by their absence, the study team was able to gather some data on retention and graduation which allowed us to monetarize the benefits mentioned above. In 1985 the average per graduate costs for the primary education cycle amounted to approximately \$1,100. Based on the assumption that an improvement in the quality of instruction will result in a reduction of average student years per graduate by fifteen percent, then this would amount to a saving of \$165 per graduate per year.

As was mentioned earlier in this report, it is important to keep in mind that some of the "savings" which might be realized are not such as to reduce the budget of MOE. Rather they constitute savings in relation to the existing levels of expenditure required under the present instructional system to produce the additional number of graduates projected. In any case, savings which might accrue through a lowering of the attrition rate are identifiable tangible benefits of the proposed LPEP integrated approach.

The GOL's Education and Training Sector Assessment (April-1983) analysis of rates of return to various levels of education pointed out that it is methodologically quite difficult to attribute employment and earnings outcomes to primary education instructional technology effects. Considering the current status of the economy, the lack of employment opportunities in the urban areas, and the seasonality of employment in rural areas, some of our assumptions might be debatable and arbitrary.

However, in order to establish baseline figures for 1985/86 we have assumed that average incremental effects on earnings at the primary level were about seven percent. In this regard we differ sharply from assumptions made in the rate of return analysis referred to earlier, where it was estimated that IEL graduates, due to improved skills, would become potentially twenty percent more productive workers than non-IEL educated and trained students. This seven percent was further discounted by two percent to allow for disincentives to productivity, particularly in public sector employment and agriculture.

Currently, the gross domestic product per capita amounts to approximately \$600. per year. Assuming that each IEL graduate can be assigned an increased productivity index of five percent (or \$30.00) then the product of the number of graduates and the gain in wage earnings represents the monetarized value of the IEL employment and lifetime earnings effect. These calculations assume, of course, that graduates will be utilized by the labor market at appropriate skill levels and associated earnings levels. Given the current negative domestic business climate and the high degree of uncertainty which accompanies employment projections at this time, it is recommended that the project's benefits should be reassessed periodically.

3. IEL Materials and Textbooks - A Least Cost Analysis

In 1983 four reports on the cost effectiveness of the IEL project were produced (Windham, 1983). The objectives of these analyses were to determine the unit costs of the IEL instructional system and to compare such costs to the textbook alternative as planned by the Ministry of Education.

The studies focussed on two major issues of internal cost efficiency. Both of these, the relative cost of photocopying versus printing as the means for cost effective reproduction of the IEL classroom materials and the problem of adapting IEL semester packages to very small class sizes, were analyzed in detail and led to conclusions which emphasized the need for materials cost reduction. A major finding of these

studies, for instance, was that the IEL system is optimal only with class sizes up to sixty students. However, the reality of the rural Liberian classroom falls far below this optimal class size at the present time.

In response to these findings, the materials cost reduction study, mentioned earlier, was undertaken by the IEL staff. The materials cost reduction report was in response to Windham's observation that the IEL original design did not take into account certain realities (such as the actual average class size) of the Liberian primary education system. Windham's findings clearly indicated a need for significant reduction in the volume of materials. In response to his recommendation the volume of the Programmed Teaching system was reduced. In grades one and two, and the first semester of grade three, for instance, the number of copies of review booklets, reading booklets, and practice booklets, were reduced by more than fifty percent. In the Programmed Learning system (PL), used in the second semester of grade three, and in grades four, five, and six, the number of PL modules was also reduced. It is this revised IEL system that is currently in use in the 109 pilot IEL schools.

a. Current Costs: IEL Materials and Textbooks. Judging from the data obtained from the IEL Division of the Ministry of Education, it would appear that the IEL project has undergone further materials reduction since the cost reduction study, particularly in the area of support materials. For the purpose of comparison, Table 7.5 presents the revised material requirements per semester package by grade level, and Table 7.6 presents the actual materials used per semester package by grade level.

It can be observed that there is a reduction in the number of pages - approximately 50 percent at grades one through three - while the original materials structure remains the same. The drastic reduction is substantial only in terms of the support materials. The PL system in grades four, five and six, was structurally modified during the revision cycle, but the actual number of pages in the revised modules was about the same as in the original. Table 7.7 summarizes the real initial materials costs for IEL dissemination.

Turning now to the cost of the materials on a per page basis, it should be noted that in the series of 1983 cost studies, a unit cost of \$.03 per page was used. However, over the last four years - from 1983 to 1986 - and particularly in the second half of 1986, the costs per page of materials have increased as can be seen below (Source: IEL/MOE, 1986).

TABLE 7.5

Materials Requirements for IEL
(Per Semester Package)
(Revised)

	Originals	Copies	Average No. of Pages	Total Pages
<u>Programmed Teaching</u>				
Grade One				
Modules	20	1	80	1,595
Review Booklets	4	7	74	1,568
Practice Booklets	14	1	25	350
Semester Test	1	1	15	15
Grade Two				
Modules	20	1	80	1,541
Reading Booklets	1	5	40	200
Review "	4	7	88	2,464
Practice "	14	1	25	350
Semester Test	1	1	15	15
Grade Three (I)				
Modules	20	1	80	1,382
Reading Booklets	1	5	149	745
Review "	4	7	387	2,709
Practice "	14	1	25	350
Semester Test	1	1	5	15
<u>Programmed Learning</u>				
Grade Three (II)				
Modules	40	3	24	2,880
E/R Modules	10	1	24	240
Student Guides	1	10	2	20
Test Booklets	10	5	12	600
Test Answer Keys	1	1	70	70
Block & Semester Tests	1	1	50	50
Grades Four, Five & Six (Per grade)				
Modules	40	3	24	3,360
E/R Modules	20	1	24	480
Student Guides	1	2	2	4
Test Booklets	10	5	12	600
Test Answer Keys	1	1	70	70
Block & Semester Tests	1	1	50	50
Arts & Crafts Manual	1	1	100	100

TABLE 7.6

Actual Material Requirements for IEL - 1986
(Per Semester Package)

Item	Original	Copies	Average No. of Pages	Total
<u>PROGRAMMED TEACHING</u>				
<u>Grade 1</u>				
Modules	20	1	91	1,820
Revised Booklets	4	10	6	240
Practice "	1	1	75	75
Semester Tests	1	1	15	15
<u>Grade 2</u>				
Modules	20	1	91	1,820
Reading Booklets	1	10	3	30
Review "	4	10	9	360
Practice "	1	1	71	71
Semester Tests	1	1	15	15
<u>Grade 3 (I)</u>				
Modules	20	1	80	1,600
Reading Booklets	1	10	14	140
Review "	4	10	10	400
Practice "	1	1	71	71
Semester Tests	1	1	18	18
<u>PROGRAMMED LEARNING</u>				
<u>Grade 3(II)</u>				
Modules	50	3	19	2,850
Student Guide	1	10	2	20
Test Booklets	10	5	9	450
Test Ans. Keys	10	1	7	70
Block & Sem. Tests	5	5	9	225
Block & Sem. Ans. Keys	5	1	35	175
<u>Grades 4, 5, & 6</u>				
Modules	60	3	20	3,600
Student Guide	1	10	2	20
Test Booklets	10	5	9	450
Test Ans. Key	10	1	8	80
Block & Sem. Tests	5	5	9	225
BST - AK	5	1	6	30
Arts & Craft	1	1	80	80

Source: IEL Division, Ministry of Education

TABLE 7.7
Actual Initial Material Costs
for IEL Dissemination

<u>Grade Level</u>	<u>Total Pages in Semester Package</u>	<u>Number of Semesters</u>	<u>Subtotal</u>	<u>Cost per Page</u>	<u>Total</u>
Grade 1	2,150	2	4,300	\$.05	\$215.00
Grade 2	2,296	2	4,592	.05	229.60
Grade 3I	2,229	1	2,229	.05	111.45
Grade 3II	3,790	1	3,790	.05	189.50
Grades 4, 5, 6	<u>4,485</u>	6	<u>27,984</u>	<u>.05</u>	<u>1,399.20</u>
TOTAL	<u>14,950</u>		<u>42,985</u>		<u>\$2,144.75</u>

Per Page Cost of Instructional Materials

Year	Semester I	Semester II
1983	\$0.03	\$0.03
1984	0.03	0.03
1985	0.04	0.05
1986	0.06	0.12

The average cost per page over the last four years is approximately \$0.05. Using the above figure, a cost comparison of original price estimates and the actual per page average for printing results in a net increase in production costs. These comparisons are summarized in Table 7.8.

An additional observation is appropriate at this point. Formerly, an expected use-life of two years for the modules was assumed. However, the actual experience of the IEL Division of the Ministry of Education, shows that a three year life span is more realistic. In the cost comparison table, therefore, a three year use-life for the modules is used.

Although there have been dramatic reductions in page content, the actual production expenses of IEL materials has increased. The cost increase is highest at PL levels (Grades four, five and six). Here the cost increase amounts to more than 67 percent.

In order to make a meaningful comparison of the IEL and textbook systems, and in order to determine the per student

(4) Textbook Program Overview: By controlling prices the MOE guarantees fixed markups over landing costs, which, when combined with bulk ordering, provides books at low prices. The money from sales is set aside in a revolving fund to purchase additional, or replacement books, thus providing materials for the future. This program shifts the financial burden from the government to the parents of school children. Since distribution agents are allowed to retain a percentage of sales revenue, a distribution mechanism is created, which should increase local attention to getting textbooks in the schools. Students may sell their used books, thus reducing the cost to the family, and increasing the overall availability of textbooks.

TABLE 7.8

Cost Comparison: Revised Versus Actual
IEL Materials

<u>ITEM</u>	<u>TOTAL REVISED</u>	<u>PAGES ACTUAL</u>	<u>PRINTING REVISED</u>	<u>COS ACTUAL</u>	<u>EXPECTED LIFE of Material</u>	<u>ACTUAL REVISED</u>	<u>COST ACTUAL</u>
<u>Grade 1</u>							
Modules	3,190	3,640	\$95.70	\$182.00	3*	\$31.90	\$60.66
Other Materials	3,866	660	115.98	33.00	5	23.20	6.60
Total	<u>\$7,056</u>	<u>\$4,300</u>	<u>\$211.68</u>	<u>\$215.00</u>		<u>\$55.10</u>	<u>\$66.66</u>
<u>Grade 2</u>							
Modules	3,082	2,640	92.46	182.00	3	30.82	60.86
Other Materials	6,058	952	181.74	47.60	5	36.35	9.52
Total	<u>9,140</u>	<u>4,592</u>	<u>274.20</u>	<u>229.60</u>		<u>67.17</u>	<u>70.18</u>
<u>Grade 3 I</u>							
Modules	1,382	1,600	41.46	80.00	3	13.82	26.66
Other Materials	3,819	629	114.57	31.45	5	22.91	6.29
Total	<u>5,201</u>	<u>2,229</u>	<u>156.03</u>	<u>111.45</u>		<u>36.73</u>	<u>32.95</u>
<u>Grade 3 II</u>							
All Materials	3,860	3,790	115.80	189.50	5	23.16	37.90
<u>Grade 4</u>							
All Materials	9,328	9,328	279.84	466.40	5	55.97	93.28
<u>Grade 5</u>							
All Materials	9,328	9,328	279.84	466.40	5	55.97	93.28
<u>Grade 6</u>							
All Materials	<u>9,328</u>	<u>9,328</u>	<u>279.84</u>	<u>466.40</u>	<u>5</u>	<u>55.97</u>	<u>93.28</u>
Grand Total	<u>\$53,241</u>	<u>\$42,895</u>	<u>\$1,597.23</u>	<u>\$2,144.75</u>		<u>\$350.07</u>	<u>\$467.53</u>

* In Windham's reports an expected life of two years for modules was assumed. However, the actual experience of the IEL Division, MOE, indicates a three year life span.

TABLE 7.9
 MOE TEXTBOOKS
Real Cost Vs. Subsidized Sales Price

TEXT							
Language Texts EP-1 - EP-6	56,678	2.00	\$113,356.00	\$1.30	\$1.58	\$2.88	\$163,232.64
Mathematics Em-1 - EM-6	200,689	3.95	729,721.55	2.68	1.58	4.26	854,935.14
Social Studies SS-1 - SS-6	258,210	2.80	722,988.00	1.93	1.58	3.51	906,317.10
Concepts of Science NS-1 SS-6	132,288	4.00	529,152	3.00	1.58	4.58	605,879.04
Scott Foresman Reader RD-1 - RD-6	<u>19,408</u>	4.70	<u>91,217.6</u>	4.36	1.58	5.94	<u>115,283.52</u>
TOTAL	<u>\$667,273</u>		<u>\$2,149,435.1</u>				<u>\$2,645,647.30</u>

Source: Figures obtained from Report on Textbook Program prepared by Christopher C. Modu, Ph.D.

cost under both systems, two considerations of the textbook system need to be introduced. The first consideration is the possible "real" cost to the MOE of the textbooks, as compared to the "subsidized" sales price of the textbook program for primary schools, financed by the Fourth World Bank Project loan. The second consideration is the use-life of the textbooks. Based on the quality of the textbooks a use-life of five years is assumed.

Table 7.9 presents the real cost of the textbooks to the Ministry of Education; it also shows the subsidized sales price. The item "Other Costs" in column five of the table contains costs estimated from the following.

- a. Salaries and wages of personnel associated with the Textbook Unit of the Ministry of Education.
- b. Cost of warehousing
- c. Transportation, gas and oil, vehicle maintenance, storage, and stock losses.
- d. Commissions ranging between 15 and 25 percent, which are payable to agents of the Textbook Unit. It should be noted, however, that the Unit's largest producing agent is paid at a rate of 25 percent.

These costs plus the C.I.F. prices of the books make up the total per unit cost of the textbooks per subject area. The amount of \$1.58 appearing in the table is the same as derived and used by Coopers and Lybrand, Chartered Accountants, in their 1984 audit of the textbook unit. Though the figure pertains to the textbooks for only one subject, it is believed to be representative, and is being applied here to all the texts purchased by the MOE under its textbook program.

The average selling price to students and total direct costs to the MOE are listed below:

<u>Text</u>	<u>Selling Price</u>	<u>Direct Costs</u>
English Bk 1 - 6	\$2.00	\$2.88
Math Bk 1 - 6	3.95	4.26
Soc. St. Bk 1 - 6 (Incl. Atlas)	2.80	3.51
Science Bk 1 - 6	4.00	4.58
Scott Foresman Reading	4.70	5.94

Based on the above, the 1986 MOE subsidized price, e.g., the price at which the package of books for all subjects in a single grade are presently sold to the student averages \$17.45. The real cost to the MOE is \$21.17. It is interesting to note that the MOE loses \$3.68 on each book distributed under the present plan. If the books were distributed without charge to the schools - the MOE absorbing the unit cost of \$21.17 - and this cost was amortized over the five year use - life of the book, the annual cost to the MOE would be \$4.23. This is an added cost of only \$0.51 per student per year and, of course, there would be no cost to the family. A small annual textbook use fee might be charged each student to defray the added cost.

Using the foregoing figures, Table 7.10 presents the per student costs for instructional materials at each grade level for three different options: (1) IEL materials, as they currently exist; (2) Textbooks at current MOE selling price (A); and (3) Textbooks at the derived real cost to the MOE

b. Cost Implications of Declining Enrollment. In November, 1986, the study team visited IEL and traditional schools. During the trip it was observed that in most of the schools visited, the largest number of students found in a class was around twenty. However, this class size was found only in the lower grade levels - grades one to three - while in Grades four, five, and six, a typical class had about five to ten pupils. This situation is reflected in Table 7.10 which starts with listing a class size of ten pupils in column 1 (as contrasted with the "20 students" column which had been used in similar previous comparisons in the 1983 cost studies series.) It can be concluded that most rural schools lack large enrollments, and in schools such as the study team visited, IEL has a cost advantage only at the lower grade levels, where enrollment tends to be relatively high, and IEL per student costs relatively low.

Since 1982, when student enrollment in public primary schools reached a new peak with a total of 109,683 students, the primary education system is experiencing a sharp decline in annual enrollments. Preliminary data indicate that total enrollment in 1986 dropped to less than 84,000 students, with the sharpest decline shown for smaller, mostly rural schools. Consequently, the average class size got smaller and smaller and a comparison of 1983 and 1985/86 figures reveals the following profile.

TABLE 7.10

PER-STUDENT COST OF INSTRUCTIONAL MATERIALS

Grade Level And# Instructional Materials	Number of Students In Class		
	10	20	40
Grade One			
IEL	\$6.67	\$3.33	\$1.69
Textbook (A)	3.49	3.49	3.49
Textbook (B)	4.23	4.23	4.23
Grade Two			
IEL	\$7.02	\$3.51	\$1.75
Textbook (A)	3.49	3.49	3.49
Textbook (B)	4.23	4.23	4.23
Grade Three			
IEL	\$7.09	\$3.54	\$1.77
Textbook (A)	3.49	3.49	3.49
Textbook (B)	4.23	4.23	4.23
Grade Four			
IEL	\$9.33	\$4.66	\$2.33
Textbook (A)	3.49	3.49	3.49
Textbook (B)	4.23	4.23	4.23
Grade Five			
IEL	\$9.33	\$4.66	\$2.33
Textbook (A)	3.49	3.49	3.49
Textbook (B)	4.23	4.24	4.23
Grade Six			
IEL	\$9.33	\$4.66	\$2.33
Textbook (A)	3.49	3.49	3.49
Textbook (B)	4.23	4.23	4.23

Average Number of Students Per Class

Grade	1983	1985/86
1	45	26
2	27	20
3	23	18
4	19	15
5	16	12
6	15	11

Note: The 1983 figures were obtained from the MOE. The actual figures for 1985/86 were not available to the study team, and were derived by making a proration of total enrollment shrinkage to each grade level.

Several reasons seem to account for the declining enrollment, with the parent's ability, or willingness to pay, being a significant factor. Another significant factor seems to be a general disillusionment with the relevance and quality of schools on the part of many parents. Others may fail to see much value in education for their children, even if quality schools were accessible. Given a general disinterest, many parents are unmotivated to pay the annual "breakage" fee of \$5.00, and the other costs associated with having their children in school - such as having to buy or make a uniform. Only this month, it has been announced that the Compulsory Attendance Law for primary age children, with a sizeable fine for noncompliance, is to be enforced. While the difficulty of actually enforcing this law on a nationwide basis has been pointed out, some exemplifying enforcement may have an effect on enrollment. Of greater importance is improving the schools; the schools being open on a regular, daily basis; learning taking place; parent and community involvement; and the availability of quality instructional materials. These things are likely to have a far greater effect on school attendance than the Compulsory Attendance Regulation. Educational leaders in the Ministry of Education assert that families can afford the minimal cost of schooling - and must be motivated to make the small sacrifices that are necessary.

According to the the most recent official enrollment data which could be obtained from the Information System and Data Services (ISDS) Division of the MOE, enrollment has declined from an all time high of 109,683 students in public schools

in 1982, to only 84,983 in 1985. There were reported to be 830 primary schools, with approximately 2,400 classrooms in 1985. Of interest, also, is that the decline appears to be equally significant from grade to grade. National enrollment statistics reveal the following pattern in public primary schools:

<u>Grade Level</u>	<u>1985</u>	<u>1986</u>
1	21,303	21,026
2	16,562	16,347
3	15,014	14,844
4	12,814	12,647
5	10,370	10,235
6	8,920	8,804

The relevance of this declining enrollment is shown in Table 7.11, which summarizes the estimates for total costs of IEL materials for initial distribution to public primary schools, using the 1985 enrollment figures. For the textbook option these figures are then compared with similar calculations made for the annual recurrent textbook costs in Table 7.12.

Table 7.13 compares the costs of three types of semester-boxes: the cost figures for a "typical" or complete semesterbox are listed in Column 1, by grade. Column 2 lists the costs of boxes from which the enrichment material has been deleted. Column 3 shows the costs for semesterboxes which contain neither the enrichment materials nor the optional materials. It should be noted that the costs listed are exclusive of the actual manufacturing cost of the wooden containers, which, according to information obtained from IEL staff, are priced at \$26.25 for a set of two.

TABLE 7.11

IEL MATERIAL COST, ORIGINAL AND ANNUAL RECURRENT
ADJUSTED FOR CLASS SIZE AND TOTAL ENROLLMENT 1985

Grade Level	Actual Original Cost	Average Class Size	Original Cost Per Student	Enrollment	Total Original Cost	Annual Cost	Annual Cost Per Student	Total Annual Cost
Grade One	\$215.00	26	\$ 8.27	21,303	\$ 176,176	\$66.66	\$2.56	\$ 54,536
Grade Two	229.60	20	11.48	16,562	190,132	70.18	3.51	58,133
Grade Three I	111.45					32.95		
Grade Three II	189.50	18	16.72	15,014	251,034	37.90	3.94	59,155
Grade Four	466.40	15	31.09	12,814	398,387	93.28	6.22	79,703
Grade Five	466.40	12	38.87	10,370	403,082	93.28	7.77	80,575
Grade Six	466.40	11	42.40	8,920	<u>378,208</u>	93.28	8.48	<u>75,642</u>
TOTAL					<u>\$1,797,019</u>			<u>\$407,744</u>

TABLE 7.12

IEL VERSUS TEXTBOOK MATERIAL COSTS, BY GRADE LEVEL
ADJUSTED FOR CLASS SIZE AND TOTAL ENROLLMENT 1985

GRADE LEVEL	ORIGINAL COST			RECURRENT COST		
	TOTAL IEL	TEXTBOOK A	TEXTBOOK B	ANNUAL IEL	TEXTBOOK A	TEXTBOOK B
GRADE ONE	\$ 176,176	\$ 371,737	\$ 450,132	\$ 54,536	\$ 74,347	\$ 90,112
GRADE TWO	190,132	289,007	349,955	58,132	57,801	70,057
GRADE THREE	251,034	261,994	317,246	59,155	52,399	63,509
GRADE FOUR	398,387	223,604	270,760	79,703	44,721	54,203
GRADE FIVE	403,082	180,957	219,118	80,575	36,191	43,865
GRADE SIX	378,208	155,654	188,480	75,642	31,131	37,732
TOTAL	<u>\$1,799,019</u>	<u>\$1,482,953</u>	<u>\$1,795,691</u>	<u>\$407,744</u>	<u>\$296,590</u>	<u>\$359,478</u>

NOTE: TEXTBOOK ALTERNATIVE (A) CURRENT MOE PRICES UNDER
WORLD BANK LOAN

(B) REAL COST OF TEXTBOOKS TO MOE

Table 7.13 Cost Comparison of Different Types of Semester Boxes

Grade Level	Cost of Complete Semester Box	Cost of Complete Semester Box - less Enrichment Materials	Cost of Complete Semester Box - less Enrichment & Optional Mtls.
1	\$215.00	\$215.00	\$215.00
2	229.60	229.60	229.60
3	300.95	272.45	272.45
4	466.40	406.40	376.40
5	466.40	406.40	376.40
6	466.40	406.40	376.40

In comparing these data it can easily be seen that with declining enrollments the IEL materials lose their relative cost advantage over the textbook option at higher grade levels. Based strictly on cost considerations, approximately 45 percent of all primary schools (having about 25 percent of total primary enrollment) do not have classes large enough for the best utilization of IEL. In another sense, these schools are most needful of IEL, in that they are generally remote, and frequently only have a single teacher who teaches at multiple grade levels.

4. Financial Impact and Recurrent Cost Implications for the Integrated (LPEP) System

Forty-three percent of all recurrent expenditures of the MOE for fiscal years 1984 through 1986 have been allocated to primary education, with 32 percent allocated to secondary education, and 25 percent to higher education. This gives some indication of MOE's relative educational priorities, based on recurrent expenditures. Personnel services in the MOE, such as salaries for teachers and administrators, Education Officers, and staff of the central office, account for approximately 80 percent of the ministry's recurrent annual expenditures.

a. Revenue Options and IEL Related Costs. As has been pointed out earlier, and aside from various community resources and low-cost strategy options, few new revenue possibilities exist for the MOE. Direct involvement of the

TABLE 7.14
AN OVERVIEW OF RECURRENT COSTS
 (\$0'000)

YEAR	1987	1988	1989	1990	1991
A. Projected MOE Budget	\$34.04	\$34.38	\$34.72	\$35.42	\$35.42
B. Annual IEL Material Related Costs	0.468	0.468	0.468	0.468	0.468
C. Annual Textbook Material Related Costs	0.212	0.212	0.212	0.212	0.212
D. Total Integrated System (B + C)	0.680	0.680	0.680	0.680	0.680
Total System Costs As % of MOE Budget (D/A)	1.99%	1.97%	1.95%	1.91%	1.91%

private sector in educational development has been a significant feature of the Liberian system, but involvement has dwindled with the expansion of the public system and the increase in apparent government control. Non-public schools continue to be an important part of the educational system; they generally have better facilities and a higher degree of internal efficiency. (Internal efficiency is defined as fewer average student years per educational cycle and lower average student cost per cycle.) However, hardly any new ideas have emerged lately about better use of private sector resources or the encouragement of additional private investments in education. This is an important area for attention, as highlighted in the 1983 Education and Training Sector Assessment and again in the 1984 National Conference on Education and Training. Yet, in this era of economic uncertainty, it may be difficult - if not impossible - to extract further commitments from private sector sources. In other words, the private sector may not be the promising resource reserve that it, perhaps, appeared earlier to be.

As was indicated earlier, MOE revenues will grow most likely at an average annual rate of one to two percent, and as a proportion of GOL's revenues, will remain at a constant rate of eleven percent. There is the possibility of "zero" growth, however, and while this might sound unduly pessimistic, the events of the last six months have shown the danger of excessive optimism in regard to Liberia's economic activity. The Study Team feels that it is only prudent for Liberia to hold its recurrent educational costs as low as possible, and where feasible, strategies for reducing recurrent cost levels should be developed.

A comparison of MOE's projected budget and estimates of IEL project related costs actually predicts a very minimal cost burden for the MOE during the next five years. It has been estimated that IEL related costs will claim an average of less than two percent of the 1986-87 MOE budget. This rather low incremental cost burden is not surprising given the large contributions of AID grant funds to training, materials production, and vehicle operation.

Table 7.14 projects MOE's budget for the next five years, assuming an annual rate of increase of 0.75 percent for 1987; 1.0 percent, each, for years 1988 and 1989; and 2.0 percent each, for the years 1990 and 1991. This assumption is modest enough that it is likely to understate, rather than overstate future MOE budget sizes.

The production and dissemination of IEL materials and supplementary equipment will most likely continue to be the single largest recurrent cost item after the MOE will become responsible for 100 percent of the recurrent cost burden.

These costs will be mainly for the replacement of IEL modules and enrichment materials, which are currently being used for three years. Members of the IEL technical Advisory Committee recently explained to the Integration Team that with improved classroom management practices resulting from teacher training workshops, a module life of four years can be expected. Improvements in material design might result in additional cost savings for MOE.

The fixed-cost nature of IEL instructional material packaging also means that class sizes can be expanded from any number up to approximately seventy students with almost no effect on total cost. This is a very important feature of the system because LPEP is intended to revitalize primary education throughout the nation. As stated earlier, "the increased efficiency of operating the schools and the improved quality of instruction should lead to expanded enrollments at all levels.

Maintaining affordable IEL related recurrent costs will also depend on the degree to which the present IEL Office is successfully absorbed into the organizational structure of the MOE. As IEL becomes an integral part of the new Bureau of Primary Education, it is assumed that its personnel will spend a portion of their time on other MOE activities. In estimating post-external funding recurrent costs, it was assumed that in five years the original IEL office staff will be devoting as little as perhaps 25 percent of their time to pure IEL activities.

currently many significant costs of the IEL system, or of the textbook unit, are difficult to measure. Their cost accounting systems seem to be designed especially for accounting and managerial control purposes only and the cost categories utilized are quite different from the functional classification needed for evaluation purposes. In the case of IEL, for instance, relevant central administration costs are borne by various departments within the MOE, while other costs frequently are offset through community efforts when individuals or groups of parents, for instance "donate time."

For cost purposes the issue of administration and supervision requirements is extremely complex. If the supervisory personnel of the MOE were already performing in a highly effective manner (reflecting adequate training for their responsibilities and the availability of resources sufficient to fulfill their responsibilities), then there would be very little marginal cost related to conversion of schools to the IEL system. However, the present status is that both training and resource availability have been insufficient to allow for the full potential of the Liberian system of educational supervision to be realized. Windham stated in his report, "In

fact, one of the anticipated supplementary benefits of IEL expansion is that it might provide a structure within which the supervisory system will itself be made more cost-effective." (Windham, 1983)

Table 7.15 reflects cost estimates for the production and dissemination of IEL materials (for two semesters) including classroom equipment, such as chalk boards and lap boards, together with cost estimates for textbook distribution for a four year time period.

The following assumptions are being made pertaining to recurrent costs and as they accrue under different scenarios, within the integrated system.

a. In grades one through three the IEL system will remain in force, but will be supplemented in each school with three sets of reference textbooks for each of the five subjects taught.

b. In grade four - the transitional grade - PL will be maintained. However, this mode of instruction will be supplemented by five sets of textbooks in each school for each of the five subjects.

c. In grades five and six the IEL system will be placed in each school, and a complete set of textbooks will be "loaned" for the school year to each student. These materials will remain in the custody of the school and will be reused with successive classes of students. The MOE may want to charge minimum "use fee" of the students to help defray the cost of the books, and to insure that the students take care of the books. All optional and enrichment materials will be deleted from the semesterboxes for the PL mode. Given these assumptions, Tables 7.16 and 7.17 present materials costs for the integrated system by grade levels. The costs have been adjusted for different class sizes per grade, using 1985 total student enrollment figures.

These calculations indicate that the total installation costs for materials amounts to \$2,707,066., while the total amount of annual recurrent costs are \$589,719. In order to compare meaningfully the costs of the integrated system with those incurred by the original IEL system or the textbook program, original and annual recurrent costs of non-instructional IEL materials are presented in Table 7.18. Here the total costs of the non-instructional materials are \$453,017 and \$90,665. respectively. When these are added to the installation and annual recurrent costs of the fully integrated system, then the total costs amount to \$3,160,083. for initial installation, and \$680,384 in recurrent costs (See Table 7.16). This increase in total costs is marginal and compares favorably

TABLE 7.15

MATERIAL COST ESTIMATES FOR EXPANSION OF
THE LIBERIAN PRIMARY EDUCATION PROGRAM

YEAR	1	2	3	4
	EXISTING 109 SCHOOLS	ADDITIONAL 221 SCHOOLS	250 SCHOOLS	250 SCHOOLS
IEL MATERIALS	\$ 65,028	\$131,846	\$149,147	\$149,148
TEXTBOOK	<u>137,903</u>	<u>286,413</u>	<u>318,236</u>	<u>318,236</u>
TOTAL	<u>\$202,931</u>	<u>\$418,259</u>	<u>\$467,383</u>	<u>\$467,384</u>

- NOTE: (1) For existing 109 IEL Schools, Material Costs are derived from Tables 7.11 and 7.18
- (2) \$137,903 worth of Textbooks will be required for the 109 existing IEL schools for integration to be accomplished. (See Table 7.16)
- (3) Material Cost Estimates for 721 schools are taken from Table 7.16
- (4) Cost distribution for Textbooks has been calculated on a percentage basis, i.e. # of schools as % of total, multiplied by total cost of textbooks. (See Table 7.16)

TABLE 7.16

IEL AND TEXTBOOK MATERIAL COSTS FOR INTEGRATION, BY GRADE LEVEL
ADJUSTED FOR CLASS SIZE AND TOTAL 1985 PRIMARY ENROLLMENT FOR PUBLIC SCHOOLS

GRADE LEVEL	INSTALLATION COSTS		TOTAL IEL AND TEXTBOOK ¹	ANNUAL IEL	RECURRENT COSTS	
	TOTAL IEL	TEXTBOOK			TEXTBOOK	TOTAL ANNUAL IEL & TEXTBOOK
Grade One	\$ 176,176	\$ 217,253	\$ 393,429	\$ 54,536	\$ 43,451	\$ 97,987
Grade Two	190,132	217,253	407,385	58,133	43,451	101,584
Grade Three	251,034	217,253	468,287	59,155	43,451	102,606
Grade Four	398,387	72,418	470,805	79,703	14,484	94,187
Grade Five	325,307	180,957	506,264	65,020	36,191	101,211
Grade Six	<u>305,242</u>	<u>155,654</u>	<u>460,895</u>	<u>61,013</u>	<u>31,131</u>	<u>92,144</u>
TOTAL	<u>\$1,646,278</u>	<u>\$1,060,788</u>	\$2,707,066	<u>\$377,560</u>	<u>\$212,159</u>	\$589,719
Cost of Non-Instructional Materials			\$ 453,017			\$ 90,665
TOTAL COST OF FULLY INTEGRATED SYSTEM			<u>\$3,160,083</u>			<u>\$680,384</u>

¹ Sum may not equal total amounts due to rounding.

TABLE 7.17
IEL MATERIAL COSTS FOR INTEGRATION, INSTALLATION AND ANNUAL RECURRENT
 ADJUSTED FOR CLASS SIZE AND TOTAL 1985 PRIMARY ENROLLMENT FOR PUBLIC SCHOOLS

<u>GRADE LEVEL</u>	<u>ACTUAL ORIGINAL COST</u>	<u>AVERAGE CLASS SIZE</u>	<u>ORIGINAL COST PER STUDENT</u>	<u>ENROLLMENT</u>	<u>TOTAL ORIGINAL COST</u>	<u>ANNUAL COST</u>	<u>ANNUAL COST PER STUDENT</u>	<u>TOTAL ANNUAL COST</u>
GRADE ONE	\$215.00	26	\$ 8.27	21,303	\$ 176,176	\$66.66	\$2.56	\$ 54,536
GRADE TWO	229.60	20	11.48	16,562	190,132	70.18	3.51	58,133
GRADE THREE I	111.45	18	16.72	15,014	251,034	32.95	3.94	59,155
GRADE THREE II	189.50					37.90		
GRADE FOUR	466.40	15	31.09	12,814	398,387	93.28	6.22	79,703
GRADE FIVE	376.40	12	31.37	10,370	325,307	75.28	6.27	65,020
GRADE SIX	376.40	11	34.22	8,920	<u>305,242</u>	75.28	6.84	<u>61,013</u>
TOTAL					<u>\$1,646,278</u>			<u>\$377,560</u>

TABLE 7.18
 IEL NON-INSTRUCTIONAL MATERIAL COSTS,
 ORIGINAL AND ANNUAL RECURRENT

GRADE LEVEL	SEMESTER PACKAGE BOXES	PEER GROUP BOARD	CHALKBOARD	LAP BOARD
GRADE ONE	\$ 26.25	\$ 56.00	\$ 21.25	\$17.42
GRADE TWO	26.25	32.00	21.25	13.40
GRADE THREE	26.25	32.00	21.25	12.06
GRADE FOUR	26.25	24.00	21.25	10.05
GRADE FIVE	26.25	24.00	21.25	8.04
GRADE SIX	26.25	24.00	21.25	7.37
TOTAL	<u>\$157.50</u>	<u>\$192.00</u>	<u>\$127.50</u>	<u>\$68.34</u>

GRADE LEVEL	ORIGINAL COST PER STUDENT	ANNUAL RECURRENT COST PER STUDENT	TOTAL ORIGINAL COST	TOTAL RECURRENT ANNUAL COST
GRADE ONE	\$4.60	\$0.92	\$ 97,994	\$19,599
GRADE TWO	4.60	0.92	76,185	15,237
GRADE THREE	5.09	1.02	76,421	15,314
GRADE FOUR	5.44	1.09	69,708	13,967
GRADE FIVE	6.63	1.33	68,753	13,792
GRADE SIX	7.17	1.43	63,956	12,756
TOTAL			<u>\$453,017</u>	<u>\$90,665</u>

with either the "unintegrated" (or original) IEL system, as well with the cost profile of the textbook program (See Tables 7.6 and 7.7).

The study team estimated that long term recurrent costs will most likely fluctuate between one and three percent of the total MOE expenditures; averaging annually at less than two percent. Given the tangible and intangible economic and educational benefits, the relatively small increase in recurrent costs to the MOE due to the implementation of the IEL component within the LPEP is both justifiable and affordable. Of even greater importance is that IEL's justification for wider implementation of the programmed teaching and mastery learning approaches is not that it is inexpensive but that it is more effective in terms of the net effect of costs and benefits.

Our cost projections indicate that three major outcomes have been allocated the largest portion of the project's inputs: (1) the provision of IEL instructional materials and textbooks to more than 800 public primary schools; (2) the improvement of the effectiveness of primary school instruction; and (3) improvements in organizational, administrative, and supervisory skills at the district and county levels. Attaining all three outcomes will be critical, not only in terms of cost-effectiveness, but also to the long term efficiency of the total public primary school system.

b. Teacher Education: Estimated cost of upgrading teachers

Currently the primary education system depends to a large degree on the Rural Teacher Training Institutes at Kakata and Zorzor to supply qualified teachers, since the graduates from the education program of the University of Liberia and Cuttington University College almost exclusively pursue administrative careers.

The budgets for fiscal year 1983/84 through 1986/87 are presented in Table 7.19. It should be noted that adding to the cost of teacher training is the full salary paid to in-service teachers while they are in training at the Teacher Training Institutes. The annual output of the teacher training programs has declined sharply during the last three years. Only 71 students graduated in FY 1984/85 (down from 98 graduates in 1983/84), from KRTTI. The production level at ZRTTI, with only 17 graduates in 1984/85 (versus 102 the previous year), reached a new low level. The production of these two training institutes falls far short of demand. The cost of producing each graduate is exorbitant! The cost for each graduate at KRTTI in 1984/85 was about \$6,113, and

TABLE 7.19
OPERATING BUDGETS FOR
KRTTI and ZRTTI
(In \$)

	83/84	84/85	85/86	86/87
<u>KRTTI:</u>				
Personnel Services	302,000	304,000	247,000	180,000
Other Services	28,000	18,000	16,000	n.a.
Material/Supplies	84,745	84,160	37,243	n.a.
Subsidies	<u>27,900</u>	<u>27,900</u>	<u>-0-</u>	<u>-0-</u>
TOTAL	<u>442,645</u>	<u>434,060</u>	<u>300,243</u>	<u>247,928</u>
 <u>ZRTTI:</u>				
Personnel Services	239,290	230,000	200,000	175,000
Other Services	22,000	20,000	18,000	15,000
Material/Supplies	117,527	125,189	56,690	46,846
Subsidies	<u>20,000</u>	<u>20,000</u>	<u>-0-</u>	<u>-0-</u>
TOTAL	<u>398,817</u>	<u>395,189</u>	<u>274,690</u>	<u>236,846</u>

- NOTES: (i) Data for total operating budgets were obtained from Division of Administration, MOE; 1986/87 figures are estimates;
- (ii) Subsidies for FY 85/86 have been appropriated but have not been paid as of November '86,
- (iii) Expenditures for personnel services, other services, and material and supplies are estimates based on past expenditure distribution;
- n.a = not available

from ZRTTI, about \$23,246.

These amounts are obviously excessive and any strategy planned for a future expansion of the programs should include cost effectiveness considerations, as any changes requiring incremental increases in recurring costs over the next several years will not be feasible.

Table 7.20 provides a detailed breakdown of estimated costs of four types of training programs which together constitute a comprehensive training effort directed toward the entire Liberian corps of primary education teachers.

The A-1 training package will provide training in the application of Mastery Learning strategies to 3,126 teachers over a period of three years. More than 480 teachers in this program had formerly received IEL training and it should be noted that they are fully certified. The typical duration of the training sessions is one week during which the participants get paid \$15 per day.

The A-2 training provides instruction in programmed teaching (PT) and programmed learning (PL) techniques and methods. The package is designed for 888 qualified teachers, 1483 unqualified teachers, and 60 supervisors who already have gone through the A-1 training package but have not received IEL training. Four week workshops will be conducted once a year over a three year period. These professionals will receive A-2 training immediately following A-1 training giving a total of five weeks During January and February.

The B-1 training package is designed to provide 2100 teachers with the necessary training to become fully certified ("C" Certificate). It is a two-year World Bank funded inservice training program, which will accomodate 1050 teachers per year for a period of two years each. Table 7.21 summarizes the costs of Liberia's inservice teacher training programs.

TABLE 7.20

ESTIMATED COSTS OF TRAINING PROGRAMS

	J/F 1988	J/F 1989	J/F 1990	TOTAL	
<u>A - 1</u>					
3126 Principals, Supervisors & Teachers	(1585)	(900)	(641)	-0-	(3126)
MLS Training One-Week @ \$15 x 7 days	\$166,425	\$ 94,500	\$ 67,305		\$ 328,230
<u>A - 2 (IEL)</u>					
888 Teachers (Qualified) 60 Supervisors 1483 Teachers (Not Qual.) Four-Weeks @ \$15 x 28 days	(920) Teachers (60) Supervisors	(900)	(611)		(2431)
	\$411,600	\$378,000	\$256,620		\$1,046,220
				Sub-Total:	\$1,374,450
Cost of Planning, Materials Preparation, and Follow-Up (Without Radio) 25%					<u>343,613</u>
					<u>\$1,718,063</u>
<u>B - 1</u>					
# of Teachers \$15/day x 56 days over two years	(1050)		(1050)		(2100)
	\$882,000	\$882,000	\$882,000	\$882,000	\$3,528,000
Cost of Planning, Materials Preparation, Operation and Follow-Up 15%					<u>529,200</u>
GRAND TOTAL:					<u>\$4,057,200</u>

TABLE 7.21

SOURCES OF TRAINING PROGRAM FUNDING, INCLUDING
DONOR SHARE

	USAID	World Bank
Training (Inservice, including refresher training)	\$1,374,450	\$3,528,000
Planning, administra- tive overhead, follow-up, supplies	(25%) <u>\$ 343,613</u>	(15%) <u>\$ 529,200</u>
TOTAL:	<u>\$1,718,063</u>	<u>\$4,057,200</u>

VIII. Summary of Recommendations

The study team has exhaustively analyzed all relevant aspects of primary education in Liberia in examining the question as to whether or not integration of the IEL program with other traditional and textbook components is possible - and if possible, is it programmatically sound, and does it make sense in terms of logistics and costs. The areas examined include: the IEL program, its history of development and the nature of its present operational effectiveness; the various inservice and preservice teacher training programs presently being implemented; the administrative and management mechanisms - both central and local - that provide governance and support of the nation's primary education program; the range and depth of textbooks developed and provided by the Fourth World Bank Project; and, finally, the cost consequences of all these.

At the conclusion of these analyses the study team is of the conviction that certain measures of integration are not only possible but, highly desirable. There are four areas at which we feel a measure of integration should occur, or which will be materially effected by integration measures. These are: (a) the instructional program; (b) the teacher training program; (c) local school supervision and support; and (d) administration and management.

The study team has further concluded that the history of USAID's past support through the IEL project, and the continuing support, evidenced by its approval of the IEL II project, are consistent with and supportive of AID's African policy of focussing on primary education as a critical target for improvement and expansion. All nations have the right to, and the responsibility for, providing the basic skills of literacy, numeracy, and physical and social science to its children. The research literature is replete with unequivocal evidence that these basic skills effect lower birth-rate, child mortality, family health, agricultural productivity, and general well being.

As noted earlier in this report, resistance to change is a characteristic of most organizations, and educationists are no less resistant than others. The controversy which surrounds the introduction of innovation into the mainstream of educational practice is not unique to Liberia - it is virtually universal. Neither is it imagined, nor of little consequence. It is real, and represents a barrier which must be overcome if significant educational improvement is to occur.

Following are brief summaries of recommendations which have

been more fully elaborated in earlier sections of this report.

1. General Recommendations

a. The Government of Liberia should develop and promulgate a statement of national policy that it intends, over the next five years, to systematically strengthen, expand, and revitalize the nation's primary education program. It should state that this nationwide effort - the Liberian Primary Education Program - will integrate the recently completed IEL development effort with those elements of traditional Liberian education of proven worth.

b. To insure the acceptance and implementation of this national policy, conferences of key central, district, and regional educators, should be convened for the purpose of describing the LPEP initiative and identifying the effects it will have at the various educational levels.

c. The Ministry of Education should create a Bureau of Primary Education under the present Division of Instruction, which will have responsibility for the implementation of the LPEP initiative in all Liberian public primary schools and will have operational responsibility for these schools. The IEL project unit should cease to exist as a special organization, be merged into the new Bureau, and become an integral part of the Bureau's routine operational organization.

d. To diminish fragmentation, overlap and, at times, incompatibility of its many programs which receive donor assistance, the Ministry of Education should take measures to insure coordination between donor support efforts. Effective donor coordination can occur only through the leadership of, and under the aegis of, the Minister of Education.

2. The Instructional Program Recommendations

a. In IEL I, the effectiveness of the empirically developed, programmed teaching/learning mode of instructional delivery has been demonstrated. The IEL program focusses on the teaching of skills and information - which it does well - but does not address, in any great way, other cognitive behaviours, such as inquiry learning skills, problem solving behaviors, or critical thinking. In short IEL does well what it was designed to do, but leaves much of educational importance undone. It is, therefore, the study team's recommendation that IEL be used as the foundation of the new Liberian Public Educational Program, but that other teaching learning modalities be added to it. This will consist of an integration of IEL, the best of current teaching practices in Liberian schools, and, with varying degrees of use, the text-

books presently available under the auspices of the Fourth World Bank project. This integrated system of instruction should be manageable by local teachers, be pedagogically sound, and affordable in its implementation and continuing operational costs. The incremental costs, as a consequence of integrating these instructional elements, will not be large, when measured against the gains in instructional quality and effectiveness.

b. In the LPEP, grades one through three will be based on the IEL products and processes, which provide optimum structure for classroom operations at these levels. IEL specifies clear and attainable objectives which will serve as the minimum standard against which student learning and progress will be assessed. At least three sets of the World Bank textbooks will be placed in each classroom as enrichment source materials, and a teacher guide will provide examples of learning activities which can be organized by the teacher.

c. The fourth grade will be a transitional year with the IEL methodology continuing to be the foundation for objectives and teaching format, but with an increased use of textbooks to supplement the IEL and teacher directed classroom activities. As in the first three grades, three to five sets of books will be placed in each classroom. For effective use at this level, there should be a set of books for about every eight students.

d. In the fifth and sixth grade LPEP will fully integrate IEL, the more conventional teaching practices, and the use of the textbooks as an integral part of the instructional process. IEL will continue to be central in definition of the instructional objectives and performance standards in the skill and information domains. The addition of other important learning objectives is made possible by the addition of planned teacher activities and the availability of the textbooks. Each student will be "loaned" a complete set of books for the school year. The books will be furnished to and remain in the custody of the schools. They will not be sold to the individual student, though the MOE may elect to charge a "use fee" to defray the costs of the books. The most important feature of the fifth/sixth grade stage is that the instructional process will evolve to a fully operational competency based, mastery learning system. Each teacher will be given a Mastery Learning Guide, which will show him/her, on a daily lesson basis, how to organize the learning events and how to integrate the use of the IEL and textbook materials. To reduce the overall costs, the enrichment and optional materials will be eliminated from the IEL package. Experience has shown these to be little used in the presently operating IEL schools.

e. Additional tests, both formative and summative, will need to be developed by the BPE staff. These will be both diagnostic and evaluative in function, and will allow measurement of student progress in terms of the LPEP objectives. The collection and analyses of sample data from these examinations will provide objective evidence of the effectiveness of the new system, and highlight portions of the program that need change, which may range from major to "fine-tuning."

f. A corollary to the development of standardized examinations, should be the continuing analysis and upgrading of the curriculum by the Bureau for Primary Education. The curriculum analysis should provide for the continuing review, refinement and improvement of the educational goals and objectives for the primary level, and provide the basis for improvement of the existing system of instruction, and future design and development efforts.

3. The Teaching Staff - Recommendations

The role of the teachers in all primary grades will need to change as the LPEP is implemented. At present there is little coordination between the various special project supported teacher training activities or the degree level programs at the University of Liberia and Cuttington University College. The result is a fragmentation of effort, and programs preparing teachers in very different ways -often failing to include training which is crucial to either IEL implementation or competency based teaching. These programs need to be unified by the Ministry of Education, and appropriate revision made in the means and standards of teacher certification.

a. Derived from the concepts of IEL and the new LPEP initiative, new and additional goals and objectives for teacher training need to be defined and incorporated at the appropriate level and sequence in the several teacher training programs. These should prepare teachers for the new roles they will need to play in the LPEP schools.

b. Some of the existing inservice teacher training efforts should be consolidated to increase cost effectiveness and reduce needless overlap and duplication. The preservice programs at the two institutions should examine their curricula to insure that the teacher behaviors needed for LPEP are incorporated in their standard teacher training courses.

c. All teachers, principals, and field supervisors, from throughout the nation, should be trained, over the next four years in the basic principles and procedures of the IEL

methodology and of the competency based, Mastery Learning approach.

d. Low-cost inservice training methodologies, such as radio and print supported distance learning, should be explored. It is probably feasible to augment "away from school" workshops and practica, by radio broadcasts in the evening and on the weekends. Properly supported by the teacher guides, newsletters, and the school principal, such approaches have been shown in Indonesia, Nepal and other countries, to be highly effective as means of maintaining and increasing teacher competencies.

e. Candidates for long and short term U.S. based training should be identified as early in possible in 1987, and arrangements made for their placement in appropriate U.S. universities, in order to begin the next academic school year in the Fall, 1987. The joint degree program exemplified by the cooperative arrangement between the University of Botswana and the IEES Consortium may be replicable in Liberia and should be examined. This cooperative arrangement has resulted in a cost reduction for Masters degree completion of 62.5 percent (from \$40,000 to \$15,000); and a time-to-completion reduction from twenty-five months to eighteen months, half of which is completed in the host country university. Also, in Botswana, it seems evident that this approach will result in significantly strengthening the University of Botswana's fledgling graduate programs in education.

4. Local Supervision and School Support Recommendations

Supervision, support and guidance for the teachers and principals will be essential during the early years of LPEP implementation. The functions of the District and Regional educational officers, related to field supervision and local school support, will become increasingly important. While not a central thrust of the IEL II project, strengthening the supervisory capacity of the national educational system should be a priority of the Ministry of Education.

a. The two-way communication linkages between the central Ministry offices and the District and Regional offices should be improved. Just as the regional officers need to spend more time with local school personnel, so do MOE officials need to spend more time in the field working with those people responsible for field supervision and support.

b. The current functions (and resources) of the field supervisor personnel - District, Regional, and County - need to be analyzed and redefined in terms of the necessities of the LPEP program. This should include revised job descriptions, a definition of standard operating procedures, and

the development of of standardized monitoring/reporting instruments.

c. In addition to the specific training in IEL and Mastery Learning procedures, supervisors should be trained in the general and specific aspects of supervision, curriculum content and methodology, and strategies for fostering parent and community support at the local level. It is not enough for the supervisor just to determine whether or not school is in session during his field visits. He or she needs to be taught how to make relevant and systematic observations and how to use these in helping to improve teaching skills.

d. As a means of improving the supervisors' instructional and administrative support of teachers and principals, especially in the rural areas, radio (LRCN) should be investigated. Audio "bulletin boards" to post information, to remind teachers and principals of information requirements, and to advise them about support that may be available, can be very useful. Shown to be of value in other countries, is the "Radio Forum" where day-to-day classroom problems can be discussed, and possible ways of dealing with these problems can be explored.

e. Planning and activating a continuing campaign of fostering parent and community leader involvement in the affairs of the school should be undertaken with MOE sponsorship. This low cost strategy for school improvement can be very effective when properly employed. If the community feels any sense of proprietorship over their schools, they are much more inclined to contribute to the "in-kind" support of the teachers and school facility. They will also be more motivated to see that their children are in school on a regular basis, and that the teacher is there to teach them.

These are comprehensive and broadly ranging recommendations. The study team believes that these are things that can and should be done, and that they will increase the impact of the IEL project on the enduring improvement of Liberian public primary education. We do not believe the integrated approach that is recommended is in any substantive way at variance with the aspirations or intentions of USAID or the Ministry of Education for the IEL project. Nor do we feel that those things we have suggested do violence to the integrity of the programmed teaching/learning approaches embodied in the IEL program.

If these recommendations are accepted there are implications for the further conduct of the IEL II project. A tabulation of the major project implementation activities and events, and suggested budget revisions, are shown in Appendix I.

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- I. Implementation Plan and Proposed Budget
- II. The Teacher Training Programs in Liberia
- III. Overview of the IEL System
- IV. Ministry of Education Evaluation Form - Supervisors
and Principals
- V. Field Personnel List
- VI. IEL Training Staff
- VII. Bureau of General Supervision and Instruction

APPENDIX I

Implementation Plan and Proposed Budget

Year One - 1987

(Enrollment Assumption = 88,200)

1. Revise existing IEL-II Project Paper
2. Amend existing IEL-II Project Agreement
3. Presidential Issuance of National Policy Statement on Primary Education
4. Unfreeze IEL-II Funds
5. Revise Request for Technical Proposals (RFTP)
6. Creation of Bureau of Primary Education (BPE) and associated MOE organizational changes
7. Issue Request for Technical Proposals (RFTP)
8. Freeze further sales of texts for 5th and 6th Grades and determine needs for immediate or future purchase
9. Establish close coordination procedures between World Bank and USAID in MOE
10. Develop Terms of Reference for:
 - a. Interim Technical Assistance (RTA) in Systems Management (12 months)
 - b. Interim Technical Assistance (RTA) in Teacher Training Specialist (12 months)
 - c. Short-term consultants in Competency-based Mastery Learning, Program and Student Evaluation, Materials Production and Distribution, Curriculum,
11. Give orientation conferences and seminars on LPEP for educational leaders (county, regional, political, higher education, community and religious leaders, etc)
12. Engage RTA's in Field as prescribed in #5 & #6
13. Begin Curriculum Analysis Process
14. Begin detailed design of the LPEP Instructional System
15. Begin development of Mastery Learning Teachers Guides

16. Send candidates for long-term training to specific institutions in USA
17. Develop contracts for materials publication processes and results
18. Design and develop teacher training contents, materials and methods, including study of possible use of distance education courses with Radio support
19. Begin development of new procedures for Supervision and teacher Support as required by LPEP including use of Radio to support and supplement
20. Begin developing formative, criterion-referenced tests for all grades in an "Evaluation Unit"
21. Study feasibility of developing post-graduate training course in a Liberian Higher Education Institution in conjunction with a U.S. University
22. Take steps to further develop and strengthen MOE capabilities in data gathering, analysis and utilization for improved planning and administration

Year Two - 1988 (Enrollment Assumption = 98,784)

1. Contract Technical Assistance Institution
2. Establish criteria for selection of first group of participating schools
3. Select 220 schools to participate in Phase I beginning March 1989
4. Cuttington University College and University of Liberia begin to incorporate Mastery Learning principles and procedures as part of WB-4 Teacher Training programs
5. Curriculum Analysis Process provides up-dated general, intermediate and specific objectives for instructional design and student evaluation units
6. Complete development of Mastery Learning Teachers Guides
7. Teacher training contents, materials and methods ready for implementation
8. First tests of new formative criterion-referenced tests for all grades at existing IEL Schools

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9. New procedures and functions for Supervision and Teacher Support as required by LPEP are completed and established as basis for design of Supervisor Training Courses

10. Organize school support groups among parents and communities

11. Receive and distribute Mastery Learning Teachers Guides (MLTG's) texts and IEL materials to all participating schools (Nov-Dec)

12. Continue public information program, with emphasis on the period November '88 to March '89

Year Three - 1989 (Enrollment Assumption = 110,638)

1. Provide training for all IEL schools and the 220 new Phase I schools (teachers and principals) in Mastery Learning Strategies

2. Train all Supervisors in Mastery Learning Strategies

3. Train teachers and principals of the 220 Phase I schools and and sixty supervisors in IEL/PT&PL methodologies

4. Train all Supervisors in new procedures and functions required by LPEP

5. Implement Phase One in 220 Schools plus existing 109 IEL Schools

6. Monitor and Evaluate On-going Program of Phase I

7. Select Phase II Schools

8. Distribute Texts, IEL Materials and MLTG's to Phase II Schools (Nov-Dec)

9. First Long-term Trainees Return to Liberia

10. Begin process of modifications and adjustments to LPEP ("fine-tuning")

Year Four - 1990 (Enrollment Assumption = 123,914)

1. Provide training for the 250 Phase II schools (teachers and principals) in Mastery Learning Strategies

2. Train teachers and principals of the 250 Phase II schools and in IEL/PT&PL methodologies

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3. Revise formative, criterion referenced tests on the basis of Phase I experiences and results
4. Implement Phase II in 250 Schools
5. Select Phase III Schools
6. Monitor and Evaluate Programs in Progress
7. Distribute Texts, IEL Materials and MLTC's to Phase III Schools (Nov-Dec)
8. Issue Evaluation Report on Phase I

Year Five - 1991 (Enrollment Assumption = 138,784)

1. Provide training for the 250 Phase III schools (teachers and principals) in Mastery Learning Strategies
2. Train teachers and principals of the 250 Phase III schools and replacement teachers from Phase I in IEL/PT&PL methodologies
3. Revise formative, criterion referenced tests on the basis of Phase II experiences and results
4. Implement Phase III in 250 Schools
5. Monitor and Evaluate Programs in Progress
6. Replace IEL Materials in Phase I schools as needed
7. Issue Evaluation Report on Phase II Schools
8. Finalize System operations and components specifications in the form of an LPEP Design, Development, Operation and Evaluation Document

Proposed Budget

If the Liberian Primary Education Program, as described in the document, is adopted as part of or a modification of the Existing Improved Efficiency of Learning- II Project certain adjustments will be possible in terms of the existing budget. In the following section we will indicate some suggested changes for the remaining period of the project - Jan. 1987 to Dec. 1991.

Technical Assistance

It is suggested that a technical assistance contractor Chief of Party (COP) who is an expert in educational systems management be contracted for the five-year life of the project, and who will report to the Minister of Education and will, with the Liberian Project Director, responsible for oversee all facets of the project ranging from LPEP design to teacher training and production and distribution of materials. Further, a technical assistant in the field of teacher training should be contracted for the five years of the project to work in the area mentioned as well as that of supervision and teacher support systems. A local hire administrative assistant should be contracted, also for the life of the project.

In addition 48 person months of short term technical assistance should be included as follows: a) 12 person months in curriculum design and development to assist in the ongoing curriculum analysis and the detailed design of the integrated LPEP system; b) 12 person months of technical assistance in Competency-based Mastery Learning to assist in the development of the LPEP program, the Teachers Guides and related aspects; c) 12 person months in technical assistance in Student and Program Evaluation procedures; and, d) 12 person months of technical assistance in Materials development, production and distribution.

Total technical assistance of 19 person years which may be estimated at \$210,000 for per person year for the full-time professionals and \$12,000 per month for the 48 months of short term assistance.

Personnel

This figure has not been changed.

Training

In-country training as described in this document will cost \$1,718,063 through the reorganization and rationalization of



the training procedures as described in Sections IV and VII, and whose costs are summarized in Figure 7-2. Participant training currently costs \$21,000 per student-year which may be reduced through the development of a Liberian Program, but it is not possible to specify precise savings at this time. Total cost for training would be \$2,252,663 for an initial savings of \$1,318,737. Of this savings, \$300,000 could be assigned to the development of Distance Education Courses using Radio and Radio Support for Teachers and Supervisors, as outlined in Sections IV and V of this document.

Commodities

It is suggested that Trail Bikes are not the best solution in a country that has such long rainy season and such a deficient highway system. Further, with the reduced technical assistance suggested here it will be possible to increase the number of vehicles given to the Regional Supervision Offices (REO). One possibility is to purchase six more four-wheel drive vehicles raising to a total of 46, of which twelve can be assigned to each REO (six initially and six after three years as replacements). With this number of vehicles, arrangements could be made to include transportation for the Peace Corp Volunteers who will be assisting the Supervisors. The amount saved would be approximately \$200,000.

Educational Benefits

No suggestions are made for major changes in this section.

Other Costs

Minor modifications have been made as indicated in the summary on the following page.

Summary of Proposed Budget - 1987 - 1991

A. Technical Assistance:

Educ. Sys. Manager (COP)	5 yrs @ \$210,000.	..	\$1,050,000
Teacher Training Spec'ist	5 yrs @ 210,000.	..	1,050,000
Admin. Asst. (local)	5 yrs @ 30,000.	..	150,000
Secretary (local)	5 yrs @ 8,000.	..	40,000
Short-term Consultants	48 mos @ 12,000.	..	576,000

B. Participant Training:

Long-term	17 yrs @ 21,000.	..	357,000
Short-term		..	177,600

C. In-Country Training 1,718,063

D. Commodities 1,520,500

E. Materials Production/Distribution 1,176,500

F. LRCN:

Air Time		..	80,000
Program Development/Production		..	300,000

G. External Evaluation 112,500
 Compliance Audit 100,000

H. Total 8,438,163

Contingency (10%) 843,816

Sub-Total 9,281,979

Inflation (est. 5%) 1,164,888

GRAND TOTAL 10,446,867

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APPENDIX II

The Teacher Training Programs in Liberia

List of Exhibits:

1. Director of Teacher Education - Job Description
2. Responsibilities of the Board of Certification
3. Approved Salary Scale for Liberian Teachers - 1986
4. Requirements of Teacher College for a B.S. in Education
5. Summary of Credit Hour Requirements at Teachers College
6. Requirements of CUC Education Division for a B.S. in Education
7. Course Sequence of CINTEC Teacher Education Program
8. Content Outline of Fifteen Day IEL Workshop

EXHIBIT 1

DIRECTOR OF TEACHER EDUCATION

JOB DESCRIPTION

GENERAL ADMINISTRATIVE RESPONSIBILITY

- Administer the operation of the Division of Teacher Education.
- Plan, monitor and supervise all Teacher Education Programs to ensure they are within the framework of the educational goals and objectives of the Ministry of Education.
- Provide feedback and professional assistance and initiate policies in collaboration with the Assistant Minister for Professional and Technical Education and other personnel in the area of Teacher Education in upgrading and training teachers.
- Initiate new programs and ensure that they are implemented within the scope of our Liberian Educational System.
- Review existing programs and policies of the Division and devise ways by which these programs and policies can be updated to reflect the new trends and development in the area of Teacher Education.
- Monitor and supervise the administration of the Extension School Program to ensure that its programs are within the framework of the educational goals of the Division.
- Make scheduled visits to Rural Teacher Training Institutes and Extension Schools to ensure that the prescribed curriculum for teacher training is rigidly adhered to and implemented.
- Ensure the smooth operation of teacher training programs in their entirety.
- Provide scholarship to in-service and pre-service teachers desirous of pursuing higher professional training in institutionalized training institutes.

PROFESSIONAL RESPONSIBILITIES

- Conduct comprehensive review of Teacher Education Programs, in order to assess their effectiveness, and to set up machinery and procedure for improvement.

- Study appropriateness of instructional methods for evaluation and assessing student-teacher characteristics and design evaluation procedures.
 - Work in collaboration with Educational Specialist who is to advise and give guidance on professional matters.
 - Work in conjunction with the Director of the Rural Teacher Training Institutes and Coordinators of Extension Schools in order to plan and work out the recruitment and selection process for the admission of candidates into the respective programs.
 - Follow-up of non-institutionalized programs such as the Extension School Program, the Mathematics Program, the Improved Efficiency of Learning Program, the In-Service Scholarship Program and the Institute for French Studies Program.
 - Conduct workshops and seminars designed to upgrade and update qualified, underqualified and unqualified teachers in our School System and to improve the quality of instruction in our classrooms.
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EXHIBIT 2

Responsibilities of the Board of Certification

The responsibilities of the Board will include:

1. To establish policies and procedures for the certification of educational personnel.
2. To advise on the establishment of the requisite machinery within the Ministry of Education for implementation of certification or more specifically to advise on the development of an efficient Certification Unit within the Division of Instruction of the Ministry - including advice on appointment of a competent staff, securing of appropriate references/resource for the assessment of credentials and setting up of a record system.
3. To ensure that all credentials for candidates are properly assessed by the Certification Unit in conjunction with a professional certification committee of the Board.
4. To recommend the issuance of certificates in accordance with the certification scheme.
5. To review conditions for service for teachers/educators and develop criteria, rules and procedures for equitable provision of incentives to educators with a view to ensure quality education throughout the country.
6. To set forth criteria for the employment of new teachers/educators.
7. To review the ethical code of the teaching profession and insure that this code is adhered to in practice by all certified personnel.
8. To recommend the revocation of certificates whenever necessary.
9. To make periodic checks of School Systems throughout the country to insure there is no violation of employment in accordance with credential requirements.

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EXHIBIT 3

APPROVED SALARY SCALE FOR
LIBERIAN TEACHERS, 1986

1.	Below High School	1,784
2.	High School Graduate	1,800
3.	"C" Certificate	2,100
4.	"B" Certificate	2,800
5.	B.Sc., B.A.	4,200
6.	AA	2,400
7.	M.Sc.	5,800

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EXHIBIT 4

Requirements of Teacher College for a B.S. in Education

Requirement (in semester hours)		Elementary	Secondary
General education requirements for all students		40	40
English	12		
Mathematics	6		
Natural Science	6		
Social Science	9		
Foundation Studies	3		
Physical Education	2		
Health Education	2		
Professional education requirements for all education majors		20	20
Educational Psychology	6		
Evaluation	3		
Student Teaching	5		
Seminar on Liberian Ed.	3		
Guidance	3		
Additional profession education requirements for secondary majors			6
Curriculum Innovations and Methodology	6		
Additional Professional education requirements for elementary majors		22	
Arts and Crafts	3		
Music Education	3		
Seminar in Elementary Curriculum	3		
Methods Courses in Con-specialization	6		
Library Science	3		
Independent Study	4		
Subject matter requirements for elementary majors		25	
Content Specialization	18		
Arts and Crafts	3		
Music	4		

Exhibit 4 (continued)

<u>Requirement (in semester hours)</u>	<u>Elementary</u>	<u>Secondary</u>
Subject matter requirements for secondary majors		45
Major teaching field (excluding general requirements)	30	
Minor teaching field (excluding general requirements)	15	
Electives		
Elementary males	19	
Elementary females	21	
Secondary males		15
Secondary females		17
ROTC requirement for males only	2	2*
Total	128	128

SOURCE: University of Liberia Bulletin, 1977. (Monrovia, Liberia: University of Liberia, 1977), pp. 88 - 89.

EXHIBIT 3

SUMMARY OF CREDIT HOUR REQUIREMENTS AT TEACHERS COLLEGE

	<u>ENGLISH</u>	<u>SOCIAL SCI.</u>	<u>MATHEMATICS</u>	<u>SCIENCE</u>	<u>AGRICULTURE</u>
General Requirements	42	42	44 or 46	44 or 46	52
Major Field	30	30	32	30	35
Minor	15	15	15	15	--
Professional Education	26	26	26	26	26
Electives and Pre- requisite	15	15	11 or 9	13 or 11	17
	<u>128</u>	<u>128</u>	<u>128</u>	<u>128</u>	<u>130</u>

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EXHIBIT 6

Requirements of CUC Education Division for a B.S. in Education

Requirement (in semester hours)	Elementary	Secondary
General Education requirements for all students	42	42
English	12	
Mathematics	6	
Lab. Science	6	
Religion	6	
History	9	
Behavioral Science	3	
Additional general education requirements for education majors	24	24
English Language	3	
English Literature	3	
French	12	
Intro. to Teaching	3	
Research Methods	3	
Additional education requirements for education majors	24	24
Psych. of Learning	3	
Tests & Measurement	3	
His./Phil. of Education	3	
School Ad. & Guid.	3	
Student Teaching	9	
Senior Seminar	3	
Additional professional education requirements for secondary majors		21
Teaching Field	21	
Instruct. Methods	3	
Additional professional education requirements for elementary majors	22	
Child Development	3	
Science in Elem.	2	
Soc. St. in Elem.	2	
Math. in Elem.	3	
Music in Elem.	3	
Arts in Elem.	3	
Children's Lit.	3	
ROTC REQUIREMENT (for males only) of Phys. Ed. requirement	1	1
Electives	15	15
Within Ed. Division	12	
Others	3	
Total	128	130

SOURCE: Cuttington University College, Liberia, 1978-79,
 (Suacoco, Liberia: Cuttington University College, 1978),
 pp. 32-35

EXHIBIT 7

Course Sequence of CINTEC
Teacher Education Program

<u>Phase</u>	<u>Course</u>
I. <u>First Vacation School</u>	Educational Psychology Foundations of Education Language Arts Mathematics Science Social Studies
II. <u>Second Vacation School</u>	Educational Psychology Language Arts Instructional Methods Mathematics Science Social Studies
III. <u>Semester of Supervised Teaching</u>	Supervised Teaching

EXHIBIT B

Content Outline of Fifteen Day IEL Teacher Workshop

Day One:

Registration of participants. Administration of teacher placement test. Explanation of Workshop schedule and IEL overview.

Day Two:

Presentation of document "A Typical Day in an IEL School", This document is designed to present what occurs in a typical programmed teaching and programmed learning classroom situations. Introduction to various aspects of Direct Instruction.

Day Three:

Demonstration and practice of various components of PT direct teaching.

Day Four:

Demonstration and practice of sounds of the alphabet or sound recognition.

Day Five:

Practice of PT Direct Instruction through the use of selected lessons in Language and Reading modules.

Day Six:

Practice of PT Direct Instruction through the use of selected lessons in Mathematics, Science, and Social Studies modules.

Day Seven:

Introduction and demonstration of Review.

Day Eight:

Practice of PT instructional cycle (Direct Instruction and Review).

Exhibit 8 contd.

Day Nine:

Demonstration and practice of the administration of Programmed teaching tests.

Day Ten:

Introduction, demonstration and practice of the procedures for upgrading the skills of grades 2 and 3 students.

Day Eleven:

Participants are taught how to carry out procedures of school preparation when IEL is introduced for the first time. This includes faculty training, sites preparation, student preparation, and materials distribution.

Day Twelve:

Introduction of the various aspects of programmed learning including organization and management of PL per groups and PL instructional materials.

Day Thirteen:

Continuation of PL demonstration.

Day Fourteen:

Demonstration and practice of the administration of programmed learning tests. Introduction, demonstration and practice of procedures for upgrading the skills of 4th, 5th and 6th grade students.

Day Fifteen:

Explanation and discussion of IEL instructional supervisory process. Workshop evaluation. Execution of closing of program.

APPENDIX III

Overview of the IEL System

IEL is a complete educational system; it is not simply an instructional technique. The system is one in which all participants (students, teachers, principals, and education officers) work together to create a supportive atmosphere for effective and enjoyable learning. Children learn together in small groups, and teachers share responsibilities across grade levels.

The primary modes of learning in IEL are forms of programmed instruction. The ways that children are taught and the ways that they are not left up solely to the teacher as in a conventional classroom. Learning is programmed by the IEL staff, a group of trained and experienced instructional design professionals.

The form of programmed instruction used in the first two and one-half years of school is called Programmed Teaching (PT). Children learn in PT classrooms through two steps: direct instruction and review.

Each of the two steps takes 20 minutes. Allowing for a five minute break between steps, the full sequence requires 45 minutes. The PT instructional sequence is repeated four times each school day, once for each of four subjects (i.e., Language, Mathematics, Reading, and Science or Social Studies).

In a typical PT classroom, children are divided into two groups of up to 30 students each. At any one time while one group is learning in Direct Instruction, the other is learning in Review.

In Direct Instruction, students are taught directly by the teacher. While conducting direct instruction with one group of children, the teacher monitors the review activities of the other group.

During direct instruction, teachers use PT Modules. Both the content of what is to be taught and the methods of how it is to be taught are contained in the PT Modules. In presenting the content to be learned, the teacher is helped by the module, eliciting student responses, reinforcing correct responses, and making corrections for faulty responses. These activities are programmed by the PT modules for most effective teaching - hence the title "Programmed Teaching".

The use of hand signals by teachers is important to the success of direct instruction. Teachers use hand signals both to indicate what material is to be learned and to inform students when to respond. The material to be learned may be presented in the module as pictures or letters or numbers. The module is held up by the teachers so that all children can see it clearly. The material to be learned also may be written on the blackboard by the teacher. In whatever way the material is presented, the teacher uses hand signals to indicate to which items of the material students are to respond.

The teacher's hand signals also are used to insure that children respond exactly on cue. In direct instruction the majority of responses are made by all the children together. It is vital to the effectiveness of direct instruction that responses of all children be made at exactly the same time so that the teacher can identify and help any students giving incorrect or hesitant answers. Because children are taught to respond precisely at the time the hand signal is given, the teacher is able to detect students who need special attention. Individual responses in direct instruction are used to identify individual needs and to give remedial help. Hand signals also are needed to elicit individual responses. The use of hand signals gives both structure and control to the teaching/learning process of direct instruction.

A single session in direct instruction lasts for about 20 minutes. This amount of time has been found to be ideal for permitting the rapid stimulus-response pace of direct instruction without losing students' concentration. (It is fast-paced learning that is within the attention span of small children.)

Although the teacher's primary attention must be given to students in direct instruction, he or she also monitors the activities of the other group which is engaged in review. If any corrections have to be made for those in review, the teacher stops direct instruction for the short time needed to make the correction.

After students have completed a 20-minute session in direct instruction, they move to a different part of the classroom for review. At the same time, the group that was in review moves into direct instruction.

There is a five-minute break between learning activities. The teacher uses this time to inform the children how to do the required review activities. The PT module contains the instructions which the teacher follows in letting the new review students know what they are to do.

For Review, the PT groups divide into smaller groups of 3 or more students. These small "PT peer groups" are made up of friends who enjoy studying together. The children are given a copy of a Review Booklet, told what pages to review, and informed how to review the materials in the booklet together. These review activities cover the same material that was learned in direct instruction during the previous 20 minutes. There are ten copies of the review booklets, and children share them. (In large classes, there can be as many as 30 students in review at one time, and three children may share a single booklet.)

Review activities include (a) asking and answering questions of each other, (b) reading aloud, (c) holding "show and tell" sessions in which students take turns showing each other something they have done, (d) having team games among PT peer groups, (e) following directions, (f) copying from the Review Booklet, (g) tracing letters or words, (h) drawing, (i) writing from dictation, and (j) writing answers to questions contained in the Review Booklet.

When children studying in review sessions have any difficulty, they raise their hands. The teacher, who is conducting direct instruction for the other group, stops direct instruction for the short time required to help the review group.

At the end of 20 minutes, PT groups again change activities. The children who were in review now move back to direct instruction in a new subject, and the group in direct instruction move on to review.

The above two-step PT instructional sequence of Direct Instruction and Review is repeated four times each school day - one time for each of four subjects. Thus, 45 minutes is spent in the study of each subject. At the end of the day, the teacher writes practice problems on the blackboard taken from the teacher's Practice Booklet. Children copy the problems in their notebooks so that they can be taken home for self-study of basic skills.

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The activities outlined above are for the first two and one-half years of school. They are all included under the general heading of "Programmed Teaching". PT activities are concluded at the end of the first semester of Grade 3.

Programmed Learning (PL) begins in the second semester of Grade 3 and extends through the remainder of primary school. Whereas programmed teaching (PT) directs the teacher's behaviors, programmed learning (PL) specifies behaviors of learners.

The majority of PL learning takes place in PL peer groups of 3 to 7 students. There is little or no direct teacher instruction. Students study together, helping each other, and the teacher monitors, corrects, and reinforces positive learning behaviors. Students use PL modules and complete one of these in two days or less.

Each peer group has three copies of the same module, and two students may share a single module. While one peer group of 3-7 students is studying one module, other peer groups are studying different modules. The modules, thus, are reusable - when one group is finished with a module, a second group checks it out to study. The savings in materials costs by IEL are substantial even though each child is able to study daily from modules. Only few copies (three or four) are needed at any one school, yet they can be used by as many as 70 students,

Within PL peer groups, students take turns being the group leader. PL modules contain specific instructions to be followed by the leader, which prescribe how the material in the modules is to be studied. One instruction, for example, is "Take Turns Reading Sentence." Other instructions include "Take Turns Answering," "Answer in Notebook," etc.

There is a set of behaviors practiced by students in PL peer groups:

- Take turns being the leader
- Follow leader instructions.
- Help the leader if he/she has difficulty understanding the instructions.
- Help each other
- Ask others for help.

- Accept help from others.
- Avoid criticizing others.
- Speak up. Don't be shy.
- Use blackboard whenever needed.
- Ask teacher for help when needed.

One module in one subject is studied in two days or less. At the end of the first day, the students copy questions into their notebooks from a "basic skills practice" page in their module. They then can take their notebooks home for self-study of basic skills.

At the end of the second day, the children take module tests. They are seated slightly apart, and the teacher gives each of them a test booklet. The items in the booklet cover the material in the module. The students then exchange notebooks and check each other's answers. The teacher follows up to help with any problems the group may have had. Items missed are recorded by the teacher as a basis for more extensive remediation at the end of the next school day. Students are assigned different remedial activities depending upon individual needs identified by the module test results.

The IEL school schedule below shows both PT and PL learning activities during a typical school day. Abbreviations used in the Programmed Teaching activities are: DI for Direct Instruction and Rev for Review.

PROGRAMMED TEACHING Group A	Group B	PROGRAMMED LEARNING
8:00 - 8:15		Opening Ceremonies
8:15 - 8:35 (L) DI	(S/SS) Rev	8:15 - 9:50 Module Learning in Peer Groups
8:40 - 9:00 (L) Rev	(L) DI	
9:05 - 9:25 (M) DI	(L) Rev	
9:30 - 9:50 (M) Rev	(M) DI	
9:50 - 10:20		RECESS
10:25 - 10:45 (R) DI	(M) Rev	10:25 - 12:00 Module Learning in Peer Groups
10:50 - 11:10 (R) Rev	(R) DI	
11:15 - 11:35 (S/SS) DI	(R) Rev	
11:40 - 12:00 (S/SS) Rev	(S/SS) DI	
12:00 - 12:45 Remediation Period		12:00 - 12:45 Remediation or Module Testing
12:45 - 1:30 Homework Assignments & Dismissal		12:45 - 1:30 Homework Assignments or Test Scoring

NOTE: - Grades 1, 2, and 3 are in Programmed Teaching
 - Grades 4, 5, and 6 are in Programmed Learning.
 - Grade 3 begins Programmed Learning the Second Semester
 - The last two periods of Programmed Learning each day are for Remediation and Homework Assignment on one day and for Module Testing and Test Scoring on alternate days.

PT materials now consist of the following:

Programmed teaching modules are used by teachers in Grades 1, 2, and the first semester of Grade 3 in conducting direct instruction. The modules make explicit both what to teach and how to teach. They present content that directly reflects the 1979 National Curriculum.

There are 20 modules for each semester. Each teacher has a single copy. There are five modules (Levels 1-5) each in Language, Mathematics, and Reading. Science and Social Studies in Grades 1 and 2 are combined. (For example, in Grade 1 semester 1, Levels 1, 3, and 5 are Social Studies and Levels 2 and 4 are Science.)

Each module has 15 lessons. One lesson is covered each day in a 20 minutes direct instruction session. The first 13 lessons are instructional lessons. The 14th lesson is an individual test usually given orally. The 15th is a group module test, and students write their responses in their notebooks.

A module comes in three separate booklets which are labeled "A", "B", and "C". Five lessons are bound together in a single booklet for ease of handling. Three booklets, thus, provide a total of 15 lessons for each module.

Review booklets are used in all PT semesters during review sessions. These booklets are designed to reinforce the learning of the previous direct session. The content of review is taken directly from the lesson in the module just completed. However, the review booklets are designed to be sufficiently different from direct instruction to avoid boredom. Most typically, the content of review booklets applies the skills and knowledge gained in direct instruction to new contents.

There is a separate booklet for Language, for Mathematics, and for Reading. There is also a single booklet containing review for Science and Social Studies combined. There are thus, four separate booklets each semester. Each semester package contains 10 copies of each booklet. Two or three students share a single booklet.

Reading booklets are used in conjunction with PT modules in direct instruction for Grades 2 and 3 only. Students use these booklets under the direction of the teacher in direct instruction. Contents of the booklets cover all subjects. Reading booklets are also distributed 10 per class or one booklet for two or three students.

Practice booklets are used by the teacher in assigning basic skills practice as homework. These booklets contain practice lessons in reading and arithmetic skills. Teachers write these lessons on the blackboard, and the students copy them in their notebooks for homework. One practice book is provided to each teacher.

PL Instructional Materials. Programmed Learning utilizes seven types of instructional materials.

1. PL Modules (Core)
" " (Optional)
" " (Enrichment)
2. Students Guides
3. Module Test Booklets
4. Module Test Answer Keys
5. Block and Semester Test Booklets
6. Block and Semester Test Answer Keys
7. Arts and Craft Manuals

PL Modules are used by students for peer group learning. The modules contain explicit instructions to the groups for studying each portion of every module.

Student Guides are reminders of appropriate peer group behaviors. Students answer questions from Module Test Booklet, and they exchange and score each other's test by using Module Test Answer Keys. The three block tests and one semester test are contained in Block and Semester Test Booklet. Answer to these questions are found in the Block and Semester Test Answer Keys.

The Arts and Craft Manual provides instruction for doing ten projects each semester. Arts and Crafts is conducted only in Grades 4 through 6.

Programmed Learning (PL) is the primary mode of learning beginning with the second semester of Grade 3. PL is conducted in peer groups of 3 to 7 students. A maximum of two students share a copy of the module that the group is studying. They take turns acting as a leader of the group. The leader of the group has his/her own copy of the module. The teacher is a manager and facilitator of PL learning and does no direct instruction.

Learning in peer groups can be a dynamic and enjoyable interaction if done right. It also can be boring and competitive if done wrong. Students sitting together silently studying their own modules are bored when this is done day after day. Some of the students proceed much faster than the norm, and a few of the slower students make little progress and often drop out of school. The teachers have a difficult time managing because every student is in a different place on the learning continuum and demands testing and feedback at different times. Also what has been learned is that if the group behavior is sufficiently structured and students receive adequate training they can learn as an active group, that fast students are not held back as much as was predicted, that all students progress at a faster rate, that post test scores are high on their first administration, that students enjoy learning much more, and that teachers prefer this kind of structured peer-group learning.

As with programmed teaching, modifications were made in programmed learning in 1983 to save production costs and strengthen learning. Again these changes were the result of field observations by Instructional Supervisors and feedback from teachers, principals and IEL staff. These changes included reducing the size of the PL group to range from three to seven, reducing the number of PL modules provided, and reorganizing PL modules into "core", "optional" and "enrichment" modules.

The maximum PL group size is still seven, but teachers are given the option of more flexible grouping. A group size of three students, however, is suggested for classes of up to 30 students. The maximum PL class size is 70 students, i.e. seven students in ten different groups. In extremely large classes, such as this, four copies of each PL module are provided, but in normal or small classes three copies of each module are contained in semester boxes and two students share a module. This

Appendix IV

FORM #PD/I-002

MINISTRY OF EDUCATION
EVALUATION FORM

DATE: _____

NAME: _____ POSITION: _____
 LAST MIDDLE FIRST

EDUCATIONAL QUALIFICATION: _____

ADDRESS: _____

SECTION: Please rate the performance of the staff by checking one of the categories listed (use code U, B, E, A, OR O):

U = Unsatisfactory E = Expected performance O = Outstanding performance
B = Below A = Above performance

RATING:

1. QUALITY OF WORK:
(Amount of acceptable work, promptness, completion) (U) (B) (E) (A) (O)
2. QUALITY OF WORK:
(Understanding of the job efficiency, accuracy, use judgement, solve problem) (U) (B) (E) (A) (O)
3. INITIATIVE:
 - a) Capacity as self starter, work independently, plan ahead (U) (B) (E) (A) (O)
 - b) Supervision required (U) (B) (E) (A) (O)
 - c) Ability to carry projects and/or directive to completion (U) (B) (E) (A) (O)
 - d) Ability to use discretion in interpreting facts and drawing conclusions (U) (B) (E) (A) (O)
4. ATTITUDE TOWARDS JOB
(Drive, dedication) (U) (B) (E) (A) (O)

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modification resulted in substantial costs savings. Comments from teachers indicate their satisfaction with the smaller, more flexible grouping.

To accommodate this range of available study time and in view of the normal time needed to complete a module, a more flexible system was designed and tried out in the second semester of 1983. The results were again favorable. This new system calls for allowing a maximum of two days of complete module and reordering the modules so that the most important material is covered first in what are called the "core" modules. There are three levels of core modules with two modules in each level (six core modules) in every subject each semester; a total of 60 modules that must be studied by students in one year. The next two modules in the series are called "optional" modules. There is one level (two optional modules) per subject for a total of 10 per subject or 20 per semester that are "enrichment" modules which are studied only if time allows after completion of core and optional modules. PL modules are normally distributed on a basis of three copies of core and optional modules and one copy of enrichment modules per class. This modification of PL allows for substantial cost savings as well as providing a more realistic schedule for learning.

5. ATTITUDE TOWARDS OTHERS
(Co-operation with Co-workers,
ability to communicate and
work with others) (U) (B) (E) (A) (O)
6. ATTENDANCE
(punctuality, regularity) (U) (B) (E) (A) (O)
7. FLEXIBILITY
a) Adaptability to change
in assignments, schedule (U) (B) (E) (A) (O)
b) Reaction to pressure (U) (B) (E) (A) (O)
8. DRESS CODE
(Well Groomed) (U) (B) (E) (A) (O)
9. SUPERVISION
(Ability in training
employees and in planning,
organizing, getting out work) (U) (B) (E) (A) (O)
10. LEARNING ABILITY
(Speed and thoroughness in
learning procedures, laws,
rules, perserverance) (U) (B) (E) (A) (O)
11. OVERALL EVALUATION (U) (B) (E) (A) (O)
12. SECTION II
REMARKS (If any) _____

EVALUATED BY: _____

POSITION: _____

ADDRESS: _____

Appendix V

**MINISTRY OF EDUCATION
DEPARTMENT OF INSTRUCTION
FIELD PERSONNEL LIST**

November 8, 1985

SOUTHWESTERN REGION - HEADED BY MR. JOSEPH Z. NEWMAN, SENIOR REGIONAL SUPERVISOR

<u>MONTSERRADO COUNTY</u>	<u>POSITION/LOCATION</u>	<u>QUALIFICATION</u>
Julia Sherman	Chief Education Officer/Monrovia	M.A./Educational Sup.
Maggie B. Dennis	District Education Officer/L/R Banks, St. Paul River and Greater Monrovia Area	B.Sc. Edu.
Nellie J. Gray	District Education Officer/Supervisor, Adult Education/Montserrado Co.	HSG, Adult Edu.Cert.
Patrick Saydee	Supervisor, Adult Education/Montserrado Co.	HSG, Adult Edu. Cert.
<u>GRAND BASSA COUNTY</u>		
Mary V. M. Reeves	Chief Education Officer/Buchanan City	B.Sc. Edu.
Winslow Fiske	District Education Officer/Owensgrove District	B.Sc. Edu.
Bismarck Diggs	District Education Officer/#4 Compound District	B.Sc. Edu.
Amos Pippins	Supervisor, Adult Education/Grand Bassa Co.	HSG, Adult Edu. Cert.
<u>RIVERCESS COUNTY</u>		
Isaac H. C. Darway I	Chief Education Officer/Rivercess	B.Sc. Edu
<u>GRAND CAPE MOUNT COUNTY</u>		
Clarence S. Paasewe (sick)	Chief Education Officer/Robertsport City	M.A./Educational Sup.
Hamidu Getaveh	District Education Officer/Garwular District	B.Sc. Edu.
Mohammed Kemokai	District Education Officer/Tewor District	
Roland Dagoseh	District Education Officer/Forkpa District	
Moses Paul	District Education Officer/Gola Konneh District	B.Sc. Edu.
J. Bai Paasewe	Supervisor, Adult Education/Grand Cape Mount Co.	HSG, Adult Edu. Cert.
<u>BOMI COUNTY</u>		
John Seh David (on study leave)	Chief Education Officer/Tubmanburg City	B.Sc. Edu.
Eric Zinnah (Act. CEO)	District Education Officer/Tubmanburg City	
Tolo B. Corfah	Supervisor, Adult Education/Bomi County	"B" Cert., Adult Edu.
<u>MARGIBI COUNTY</u>		
Esther Hughes	Chief Education Officer/Kakata	B.Sc. Edu.
Victoria Wilson	District Education Officer/Kakata	B.A.

NORTHCENTRAL REGION - MRS. MARIE J. MASON, SENIOR REGIONAL SUPERVISOR

<u>NIMBA COUNTY</u>	<u>POSITION/LOCATION</u>	<u>QUALIFICATION</u>
John E. Nenvon	Chief Education Officer/Sanniquellie City	B.Sc. Edu.
William G. Voahn	District Education Officer/Yarwine-Mensuhn	M.Sc. Edu.
G. Waymah Jackson	Act. District Education Officer/Yarwine-Mensuhn	
Martin Fargalo	District Education Officer/Gbeleh-Geh District	
Mohandos S. Dekpah	District Education Officer/Tappita District	
Jackson G. Waymah	District Education Officer/Zoe-Geh District	
Isaac P. Mialor	District Education Officer/Saclepea-Mah District	B.Sc. Edu.
J. Benedictus Dopoe	District Education Officer/Sanniquellie-Mah Dist.	B.Sc. Edu.
Samuel Karnue	Supervisor, Adult Education/Nimba County	2nd Year College
<u>BONG COUNTY</u>		
John Y. Sumo	Chief Education Officer/Gbarnga City	M.Sc. Edu.
Richard T. Kpangbai	District Education Officer/Korkoryah District	B.Sc. Edu.
John K. Wornor	District Education Officer/Sanoyea/Salala	B.Sc. Edu.
Peter Hamilton	District Education Officer/Fuamah District	B.Sc. Edu.
	District Education Officer/Somei Area District	
Peter S. Dolo	District Education Officer/Gbarnga District	B.Sc. Edu.
David W. Gbawoquiya	District Education Officer/Suacoco District	B.Sc. Edu.
K. G. S. Kapu	District Education Officer/Zota-Panta District	B.Sc. Edu.
John S. McKay	Supervisor, Adult Education/Lower Bong	HSG, Adult Edu. Cert.
Michael Tegli	Supervisor, Adult Education/Upper Bong	HSG, Adult Edu. Cert.
<u>LOFA COUNTY</u>		
Melton S. Clinton	Chief Education Officer/Voinjama City	M.A. Edu.
Milton K. Freeman	District Education Officer/Voinjama District	M.Sc. Edu.
Amara Jallah	District Education Officer/Bopolu District	ZRTTI Graduate
Richard Kollie	District Education Officer/Bolomu & Belle Dists.	B.Sc. Edu.
Felix F. Stubblefield	District Education Officer/Kolahun District	B.Sc. Edu.
Marie McKay	District Education Officer/Zorzor District	B.Sc. Edu.
Willie Z. Varnie	District Education Officer/Gbarma District	B.Sc. Edu.
Ernest D. Carmo	supervisor, Adult Education/Upper Lofa	HSG, Adult Edu. Cert.
Barnabas Kerkula	Supervisor, Adult Education/Zorzor District	HSG, Adult Edu. Cert.

SOUTHEASTERN REGION - MR. JOHNSON S. WILLABO, SENIOR REGIONAL SUPERVISOR

<u>SINOE COUNTY</u>	<u>POSITION/LOCATION</u>	<u>QUALIFICATION</u>
Irvin W. Kofa	Chief Education Officer/Greenville City	M.Sc. Edu.
A. Doehan Sneh	District Education Officer/Kpanyan District	B.Sc. Edu.
David T. Chon	District Education Officer/Butaw District	B.Sc. Edu.
Charles N. Wiah	District Education Officer/Juarzon District	B.Sc. Edu.
Christopher Sawboh	District Education Officer/Upper Kpanyan	
Friday M. Jah	Supervisor, Adult Education/Sinoe County	"B" Cert. Adult Edu.
 <u>GRAND GEDEH COUNTY</u>		
Emmanuel B. Neewray	Chief Education Officer/Zwedru City	B.Sc. Edu.
Samuel B. Martin	District Education Officer/Webbo District	B.Sc. Edu.
Alyson Waylee	District Education Officer/Konabo District	B.Sc. Edu.
Robert B. Toe	District Education Officer/Gbeapo District	B.Sc. Edu.
Arthur Y. Kahn	District Education Officer/Gbarzon District	ZRTTI Graduate
H. Shad Sanny	District Education Officer/Tchien District	B.Sc. Edu.
Shelldrick T. Teah	Supervisor, Adult Education/Grand Gedeh County	"B" Cert., Adult Edu.
 <u>MARYLAND COUNTY</u>		
A. Conde Reed	Chief Education Officer/Harper City	B.Sc. Edu.
Irene Prowd	District Education Officer/Harper City	3.Sc. Edu.
Samuel E. D. Jaffa	District Education Officer/Barrobo District	B.Sc. Edu.
William W. Nimene	District Education Officer/Pleebo District	B.Sc. Edu.
Victor B. Walker	Supervisor, Adult Education/Maryland County	"B" Cert. Adult. Edu.
 <u>GRAND KRU COUNTY</u>		
Augustine T. Jappah	Chief Education Officer/Grand Kru County	M.A. Edu.
Abraham K. Blidi	District Education Officer/Barclayville	B.Sc. Edu.
B. Lytton Toechea	District Education Officer/Buah District	B.Sc. Edu.
Felix Woto	District Education Officer/Sasstown	B.Sc. Edu.
Isaac Nah	District Education Officer/Timbo/Garraway	B.Sc. Edu.
John Weah	District Education Officer/Grandcess	B.Sc. eDu.

IEL TRAINING STAFF
1986

<u>NAME</u>	<u>STATUS</u>	<u>QUALIFICATION</u>
S. Boniface Nah, Sr.	Head, Implementation/ Training Coordinator	M.Sc. (Edu.)
Barbara T. Soper	Instructional Supervision/ Trainer	B.Sc. (Edu.)
Joseph M. Kolubah	Instructional Supervisor/ Trainer	B.Sc. (Edu.)
Edward Fayia	Instructional Supervisor/ Trainer	B.Sc. (Edu.)
Edmund O. Anakwuru	Instructional Supervisor/ Trainer	B.A
Alexander Nufeatalai	Instructional Supervisor/ Trainer	B Certificate
Tamba E. Chokpele	Instructional Supervisor/ Trainer	B Certificate
Joseph Gbelemah	Teacher/Trainer	C Certificate
John B. Kortu	Principal/Trainer	High School
Michael L. Senesee	Teacher/Asst. Trainer	B Certificate
Prince Venegar	Teacher/Asst. Trainer	High School
P. A. Lakpor	Teacher/Asst. Trainer	B Certificate
Joshua Dorbor	Teacher/Asst. Trainer	High School
Thompson Tweh	Teacher/Asst. Trainer	C Certificate
Judy Nance (PVC)	Asst. Trainer	
Lisbeth Wright (PVC)	Asst. Trainer	

Appendix VII

JOB DESCRIPTIONS
BUREAU OF GENERAL
SUPERVISION & INSTRUCTION
MINISTRY OF EDUCATION 1981

1. Assistant Minister for General Supervision & Instruction

The Assistant Minister for General Supervision and Instruction reports directly to the Deputy Minister for Instruction and directly supervises the Senior Regional Supervisors, for Community School Program, Adult Education, Schools Feeding and Pre-Primary.

Overall Responsibilities:

Responsible for all supervisory activities relating to education within the Republic of Liberia which falls under the jurisdiction of the Ministry of Education. To ensure that the prescribed educational policy and standards are adhered to, and that the necessary logistical, administrative and other supporting services will be provided on time to facilitate the smooth operation of the schools.

Specific Tasks:

- (a) Supervises and controls all supervision activities of the Ministry of Education relating to all instructional programs.
- (b) Provides an administrative link between various sections of the country and the Deputy Minister of Education for Instruction.

- (c) Coordinates and reviews all instructional programs to be introduced into the school system.
- (d) Advises and assists in the formulation of instructional programs for Adult Education, School Feeding and Pro-Primary Programs.
- (e) Directs the Senior Regional Supervisors to make periodic visits to each school within their respective regions to observe the schools' operation with particular reference to programs standards, staffing, logistical problems and the community concerns.
- (f) Assists in the preparation of specific plans; evaluates plans, performance and makes necessary recommendations.
- (g) Arranges for program and administrative specialists to provide assistance to the various schools.
- (h) Directs and coordinates preparation of all budgetary proposals for the management of the school system and makes recommendations as to priorities on resource allocation.
- (i) Approves and monitors budgetary expenditures against approved budget appropriations.

Desirable Qualifications:

- Academic: Master's Degree, preferably in Educational Administration.
- Certification: Administrator's credentials when available in Liberia.
- Experience: Minimum of 5 years in an educational setting.

2. Regional Supervisors

As a result of the re-organization of the Ministry of Education, the entire country is divided into three educational regions which are the following:

- (a) The South Western Region which is comprised of Cape Mount, Montserrado and Bassa Counties.
- (b) The North Central Region which is comprised of Lofa, Bong and Nimba Counties,
- (c) The South Eastern Region which is comprised of Grand Gedeh, Sinoe and Maryland Counties.

Each of the Regions is headed by a Senior Regional Supervisor while each county is in the charge of a Chief Education Officer. The job descriptions of these officers and their subordinate staff - District Education Officers, Principals and Teachers are as follows:

Position Title: Senior Regional Supervisor

Reports Directly To: Assistant Minister for General
Supervision.

Directly Supervises: Chief Education Officers

Overall Responsibility: In charge of all the educational activities of the schools within the region, ensuring the maintenance of prescribed educational standards, providing the link between headquarters administration and Chief Education Officers for the purpose of communication, logistical and program-support, evaluation and budget preparation and administration.

Specific Tasks:

- (a) Provides leadership and guidance to the Educational Program of the region. Sees that schools operate on scheduled school days and the prescribed curriculum. is followed and the proper amount of time is spent in each subject area.
- (b) Coordinates the efforts of program specialists and advisors in providing services to the region by working with Chief Education Officers to ensure that each staff is effectively used by District Education Officers and Principals for the improvement of the education program offered to the students.

- (c) Visits or directs the Chief Education Officer to visit each school in his region approximately twice yearly to observe its operation with particular reference to adherence to program standards, staffing, logistical problems and community concerns.
- (d) Requires the preparation of specific plans with timetables for completion and measures to be taken for correction of program or physical plant deficiencies by Principals, District Education Officers and Chief Education Officers. Follows up to ensure the planned actions are carried out.
- (e) Prepares reports concerning the status of schools in the assigned region with recommendations for correcting deficiencies.
- (f) Arranges for program and administrative specialists to provide assistance to schools in the region.
- (g) Evaluates or causes evaluation to take place by Principals, District Education Officers and Chief Education Officers on the performance of staff in the region, districts and schools, and recommends training for staff to enhance their performance.

(h) Directs the preparation of annual budgetary proposals for the region and makes recommendations as to priorities on resource allocation. Approves and monitors budgetary expenditures against approved budget allocations.

Desirable Qualifications:

Academic: Master's Degree preferably in Education Administration.

Certification: Administrator's credentials when available in Liberia.

Experience: Minimum five years experience in an educational setting.

3. Position Title: Chief Education Officer

Reports Directly To: Senior Regional Supervisor

Directly Supervises: District Education Officers

Overall Responsibility: In charge of all educational activities of the schools within the assigned county, ensuring the maintenance of prescribed educational standards, providing the link between headquarters administration and Senior Regional Supervisors for the purpose of communication, logistical and program support evaluation and budget preparation and administration.

Specific Tasks:

- (a) Provides leadership and guidance to the educational program in the county. Sees that schools adhere to the educational policy and standards prescribed by the Ministry of Education.
- (b) Visits each school in the County periodically (approximately twice yearly) to observe its operation and ascertain its adherence to ensure that the schools are adequately staffed and equipped with the necessary materials and supplies and other administrative and logistical support.
- (c) Participates in the preparation of specific plans with schedules for completion. Monitors the implementation of plans and suggests ways and means to overcome inadvertent mistakes and other shortcomings in plan performance.
- (d) Prepares reports concerning the status of schools in county with recommendations for correcting deficiencies.
- (e) Directs the preparation of the annual budgetary proposal for the county and makes recommendations as to priorities on resource allocation. Monitors budgetary expenditures against approved budget appropriations.
- (f) Requests administrative specialists as necessary to provide assistance to educational administration and supervision of schools.

Desirable Qualifications:

- Academic:** Bachelor's Degree, preferably in Educational Administration. A Master's Degree in the educational field would be an advantage.
- Certification:** Administrator's credentials when available in Liberia.
- Experience:** Minimum five years in an educational setting.

4. Position Title: District Education Officer
- Reports Directly To: Chief Education Officer
- Directly Supervises: Principal and a corp of subordinates
- Overall Responsibility: In charge of all educational activities within the district, ensuring the maintenance of prescribed educational standards, and providing the link between headquarters administration and the principals. To facilitate communication between districts and the county. To also ensure that the schools are provided with adequate logistical and administrative support as well as to participate in budget preparation and evaluation of school performance.

Specific Tasks:

- (a) Provide leadership and guidance to the educational program in the district.
- (b) Visits each school in the district periodically to observe the operation and ascertain its adherence to the prescribed educational policy and standards as well as to ensure that the schools are adequately staffed and equipped with the necessary materials and supplies and other administrative and logistical support.
- (c) Participate in the preparation of specific plans with time-tables for completion. Monitors plans implementation and suggests ways and means to overcome shortcomings in the execution of the plan.
- (d) Prepares reports concerning the status of schools in the district with recommendations for correcting deficiencies.
- (e) Co-ordinates all services granted to the district and makes recommendation as to priorities on resource allocation.

Desirable Qualifications:

- Academic:** Bachelor's Degree, preferably in Educational Administration. A Master's Degree in the Educational field would be an advantage.
- Certification:** Administrator's credentials when available in Liberia.
- Experience:** Minimum five years experience in an educational setting.

5. Position Title: Principal

Reports directly to: District Education Officer

Directly Supervises: Assistant Principals, Registrar, Teachers and corp of subordinates.

Overall Responsibility: Administers the affairs of the school, giving guidance and support in the daily operation of the school. To plan and organize, in collaboration with others, the relevant school programs and activities. To also be in charge of instructional supervision-ensuring that the prescribed educational standards are being adhered to.

Specific Tasks:

- (a) Provides leadership and guidance to teachers and students.

- (b) Disseminates all information regarding the educational policies as proscribed by the Ministry of Education.
- (c) Coordinates all planning activities, program scheduling for the academic year.
- (d) Identifies needs of the school and makes timely request for materials and supplies with frequent follow-up.
- (e) Evaluates teachers and other subordinates' performance and makes the necessary recommendation to enhance the school's administrative and instructional operations.
- (f) Maintains proper standards of discipline and provides an incentive scheme to encourage students to perform well.
- (g) Maintains constant contact with the Ministry of Education through the District Education Officer.
- (h) Consults periodically with other school administrators to identify ways and means by which various educational problems can be solved.

Desirable Qualifications:

Academic: Master's or Bachelor's Degree preferably
 in Educational Administration.

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Certification: Administrator's credentials when available in Liberia.

Experience: Minimum of 4-5 years in an educational setting.

6. Position Title: Teacher

Reports Directly To: Principals

Directly Supervises: Teacher Assistants, if any

Overall Responsibility: To teach and conduct classes in area of speciality. To also provide students with knowledge and skill with special emphasis on the practical aspects of the subject matter as well as to participate in planning and organizing other school activities.

Specific Tasks:

- (a) Participate in planning the curriculum and school activities for the academic year.
- (b) Makes realistic and flexible lesson plans and conducts classes accordingly.
- (c) Teaches and evaluates students' performance.
- (d) Gives guidance and counseling when necessary.
- (e) Gives emphasis to the practical aspects of the subject matter.

- (f) Prepares the students to develop a sense of civic responsibility.

Desirable Qualifications:

Academic: Minimum Requirement: High School Certificate with at least 2 years' Teacher Training.

Certification: Minimum requirement: High School Certificate and minimum 1 year practical teaching with experience in Classroom Management and Lesson Planning.

**Persons Interviewed by Members of the
Intergration Study Team**

I. Technical Committee, Ministry of Education

Hon. Wilmot K. Frooman, Deputy Minister for Planning & Development
Hon. Delano Cooper, Assistant Minister for Planning and Development
Hon. Isaac Zawalo, Assistant Minister for Professional-Technical Education
Hon. Helene Summerville, Assistant Minister for Curriculum - Student Personnel Services
Hon. Sarah Givens Carey, Assistant Minister for Supervision & Instruction
Dr. Albert Coleman, Director/Specialist, Teacher Education Division
Mrs. Janice Vani, Project Director, Improved Efficiency of Learning Project

II. Ministry of Education

Hon. E. Othello Gongar, Minister of Education
Mr. Wilmot K. Freeman, Deputy Minister, Department of Planning and Development
Mr. Raymond Jallah, Deputy Minister of Education, Department of Instruction
Mr. Delano Cooper, Assistant Minister, Department of Planning and Development
Mr. Issac Zawalo, Assistant Minister for Professional - Technical Education
Mrs. Helene Summerville, Assistant Minister for Curriculum - Student Personnel Services
Mrs. Sarah Givens Carey, Assistant Minister for Supervision and Instruction
Dr. Albert Coleman, Director/Specialist, Teacher Education Division
Mr. Issac G. Ndebe, Director, Information Systems and Data Services Division (Fourth World Bank Project)
Mr. Herbert S. Goodlin, Director, World Bank Textbooks Project
Mr. Jones B. Dopoe, District Education Officer, Sanniquellie-Mah District
Mr. Joseph Newman, Senior Regional Supervisor, Southwestern Regional Office, Paynesville
Mrs. Maggies B. Dennis, District Education Officer, Southwestern Regional Office, Paynesville
Mrs. Maggies B. Dennis, District Education Officer, Southwestern Regional Office, Paynesville
Mr. John Y. Sumo, Chief Education Officer, Bong County, Northcentral Regional Office

Mrs. Julia Sherman, Chief Education Officer, Montserrado County
Mr. Sam Brown, Director Curriculum Division
Mrs. Emma Campbell, Curriculum Division
Mrs. Emma Campbell, Curriculum Division
Mrs. Janice Vanl, Project Director, Improved Efficiency of Learning Project
Mr. Edwin Clarke, Head, Instructional Design and Evaluation Unit
Mr. Boniface Nah, Head, Implementation Unit (Teacher Training & Supervision)
Mrs. Barbara Sopar, Elementary Education Instructional Supervisor/Teacher Training
Mr. N. Saa Wanda Samba, Educational Administration, Evaluation and Design Specialist
Mr. Richard Zayzay, Project Accountant, IEL Project
Mr. Franklin Kennedy, Production Manager, IEL Project
Mr. Chokpele, Instructional Supervisor and Teacher Trainer, IEL Project
Mr. Anokwuro, Instructional Supervisor and Teacher Trainer, IEL Project

III. United States Agency for International Development

Dr. Mary Kilgour, Director USAID, Liberia
Mr. Michael Rugh, Deputy Director, USAID, Liberia
Dr. Stanley Handleman, Human Resource Development Officer, USAID
Dr. Murraray Simon, Project Manager, Human Resource Development Office
Dr. Edward T. Costello, Program Economist
Mr. Harald Marwitz, Program Officer
Mr. George Hazel, SPPD
Mr. Mark Gallagher, Economist

IV. National Universities

Mrs. Cecilia Freeman Bull, Dean, William V.S. Tubman Teachers College, University of Liberia
Dr. Frederick Gbegbe, Chairman, Elementary Education and Corodinator, CINSTEP Program, University of Liberia
Dr. Daniel Barclay, Director of the Division of Continuing Education, University of Liberia
Dr. Stephen M. Yekeson, President, Cuttingham University College
Dr. William S. Salifu, Dean of Instruction, Cuttington University College.

V. Others

- Mr. Jeremiah Clay Wlutobo, Director, Kakata Rural Teacher
Training Institute, Kakata, Margibi County
- Saa Phillip Joe, President, National Union of Liberian
Teachers (NULT)
- Major Venecious K. Vorkpor, superintendent, Bong County
- Mrs. Etomonía Tarpéh, Associate Director for Education,
Peace Corps.
- Ms. Judy Nance, Peace Corp Volunteer
- Mrs. Violent Flash, Assistant Superintendent, Monrovia
Consolidated School System
- Sister Mary Laurene, Education Secretariate, Archdiocese of
Monrovia
- Mr. William Mackie, Project Director, Liberian Rural
Communication Network (LRCN)
- Mr. Michael Stokes, Liberian Rural Communication Network
(LRCN)
- Mr. Robert Neal, Assistant Minister, Social Planning Division
Ministry of Planning and Economic Affairs
- Mr. Moses Wreh, Deputy Director, Bureau of the Budget
- Mr. Francis Caesar, Assistant Director, Bureau of the Budget