

PN-ABP-910
25/5/93

An Evaluation of the Development and Implementation of Learning Modules in Primary Education

Submitted to:
United States Agency for International Development / Pakistan

Submitted by
EDC
Educational Development Center, Inc.

in Collaboration With
NIP
National Institute of Psychology
Centre of Excellence, Quaid-i-Azam University
Islamabad, Pakistan

Principal Author
Dr. Mohammed Pervez
National Institute of Psychology
Quaid-i-Azam University

Indefinite Quantity Contract, PDC-5832-I-00-0082 D.O. # 9
Funded under
the Pakistan Primary Education Development (PED) Programme
Project No. 391-0497

April 1993

Revised: April 30, 1993

This evaluation study of the development and implementation of Learning Modules in primary education under the Second Primary Education Project (PEP-2) was funded by the United States Agency for International Development under the Pakistan Primary Education Development (PEP) programme. The contractor for this evaluation study was the Education Development Centre, Inc., through its Indefinite Quantity Contract with USAID for Education and Human Resource Development. The evaluation was undertaken by the National Institute of Psychology, Centre of Excellence in Quaid-i-Azam University, Islamabad, Pakistan. Dr. Mohammed Pervez is the Principal Investigator and author of this report. Dr. John Bowers assisted as a consultant under contract with the Education Development Center, Inc. in Newton, Massachusetts, USA. Dr. Bowers, in collaboration with Dr. Pervez, developed the evaluation work plan for the study and assisted Dr. Pervez in the analysis and interpretation of data and in the preparation of the final report.

An Evaluation of the Development and Implementation of Learning Modules in Primary Education

Executive Summary

Introduction. This report summarizes evaluation findings regarding the development and implementation of learning modules designed and produced by the Second Primary Education Project (PEP-2). The project's goal was to improve teaching and learning in primary schools through Learning Modules and Learning Coordinators trained to assist teachers in use of the modules. Modules were developed in three provinces; evaluation is limited to Balochistan and the NWFP. The project grew out of the First Primary Education Project, where poor teacher training was found to be a serious obstacle to school improvement. PEP-2 planners hoped to overcome poor teaching with well-structured Learning Modules disseminated by trained Learning Coordinators to schools.

It is important to emphasize that World Bank's investment in the learning module concept and in the production of Learning Modules was a good decision. The expected benefits of modules on teaching were not realized because of PEP-2's weak implementation strategy. World Bank intended that PEP-2 would be guided in phases by research and evaluation towards integration with the regular system. This implementation failure resulted because project directors could not properly institute two critical components of the original project design — they failed to effectively establish a system of formative evaluation and they failed to move PEP-2, on appropriate points of time, through developmental phases that would leave it integrated with regular system.

The Evaluation Focus. The study's terms of reference stated that modules should be evaluated in ways that would allow sponsors and/or the Government of Pakistan to decide whether to adopt all or some aspects of the modular approach or to explore alternative approaches. The focus of the evaluation was on

- (1) The agreement of module, textbook, and curriculum objectives;
- (2) Changes in teacher behavior;
- (3) Changes in student behavior;
- (4) Strengths and weaknesses of the modular approach;
- (5) Factors constraining the use of modules.

These broad terms of reference called for the evaluation of (1) Learning Module characteristics; (2) project development, training, and supervision activities; (3) changes in teaching attributable to the modular approach; (4) changes in pupil learning attributable to the approach; and (5) factors impeding implementation.

Planning visits in September found modules in schools but teachers were not using them. Teachers were only vaguely aware of the modules and did not associate the training they received from Learning Coordinators with the application of modules for teaching. The scope of evaluation was expanded to examine reasons for weak implementation. Evaluation shifted more towards an attempt to identify problems encountered by the modular approach.

Professional Staff. Psychologists with experience and skills in observation and interviewing were recruited and trained. Teams included Dr. Pervez, the Principal Investigator, and seven other psychologists (three women and four men).

Methods. Procedures and instruments were developed to collect information about modules, classroom behavior, school sites, training, and implementation activities. Sources of information were PEP-2 staff, Learning Coordinators, and teachers. Instruments were field-tested and revised. Data collection started in November 1992 but was not finished until early March 1993 due to unexpected closing of school, bad weather, and bank delays in Pakistan.

Samples. Four districts in the NWFP and two districts in Balochistan were selected for data collection. One district was dropped in the NWFP with USAID approval when problems occurred. Data were collected for 74 modules, 51 primary classrooms (and an equal number of teachers), 70 Learning Coordinators in 10 focus groups, and 95 teachers in 15 focus groups. Staff of the Federal Implementation Unit (FIU) and the two Provincial Implementation Units (PIU) were also interviewed by the Principal Investigator.

PIU/FIU Interviews. Problems uncovered were not unique to the PEP-2 project. Some staff in the field were skeptical about the approach because they were unconvinced that PEP-2 addressed the real needs of Pakistani schools, teachers, and pupils, or that the PEP-2 approach could be effectively integrated within the context of Pakistani education. Coordination with the regular education establishment was a problem because effective control of schools and teachers was in the hands of the provincial departments of education represented in the field by DEOs. PEP-2 created a parallel PIU in each project province. This meant that on many occasions, the PEP-2 system competed with and at times conflicted with the regular system.

Recruitment of staff with appropriate experience and competency for a limited-time project was a problem. A project that aims at implementing a new and untried innovation in a very traditional society must recruit a dedicated team. The FIU never succeeded in doing this. This rarely happened in the PIUs where the average length of service for a Project Director was no more than two years; many PIUs were without a Project Director for extended periods of time. The original modular concept became degraded as responsibility for module design kept changing hands. The drift into conceptual vagueness is shown by a PIU Project Director who asserted that modules are nothing new, just take a lesson from a textbook and tell teachers how to explain it.

Senior specialists/experts responsible for FIU training were often experienced teacher trainers with a strong identification with and stake in the regular educational system. Modules were new to them, so they conceptualized modules in terms of their experience with PTC training. Many people responsible for training Learning Coordinators had never themselves been trained in the PEP-2 approach. Writers whose names appear on modules showed complete ignorance about the basic concept, purpose, and structure of Learning Modules.

Learning Modules. Because teacher training was the weakest part of the First Primary Education Project, disseminating Learning Modules was the strategy of choice for PEP-2. Module development was a pre-condition for negotiating PEP-2. Modules were seen to serve several needs: (a) a basis for in-service training courses, (b) a post-training guide for teachers, (c) learning aids for students transmitted to them through their teachers, (d) a focal point for supervision and on-the-job remedial training, and (e) vehicles to upgrade student achievement. The concept of modular approach was envisaged to be distinctly different from the concept of lesson planning as understood and practiced in primary school teachers' training programmes in Pakistan. That is why "lesson planning" does not emerge in the conceptual description of learning modules in World Bank Pre-Appraisal report of August 1984. Lesson planning was also not considered relevant in the amplification of the

concept of Learning Modules as attempted in the Learning Modules' Writers' Workshop, organized by PIU in 1987.

Modules were rated on several characteristics. Findings were (a) objectives were clear for the most part but module, textbook, and curriculum objectives matched for only half of the modules, (b) text content for three-quarters of the modules was clear, consistent with objectives, and accurate and up-to-date, (c) teaching activities were consistent with explanatory text and objectives for three-quarters of the modules, were rated as good for half the modules, but easily available materials would be available for only a third of the modules, (d) most modules did not receive favorable ratings for pupil activities — 40 per cent were rated as stimulating and as providing sufficient time, but only one-fourth were consistent with teacher activities and objectives (e) 80 per cent of the modules received favorable ratings in terms of the consistency of their materials requirements and objectives, but these materials could be found in the primary teacher kit for only 12 per cent of the modules, and 40 per cent used easily available materials, (f) between 80 and 90 per cent of the modules received favorable ratings for organization and ease of use, but only 40 per cent were seen as helpful for lesson planning, (g) 22 per cent of the modules showed consistency between objectives and student assessment procedures, slightly over half were rated as having student assessment procedures at appropriate difficulty levels and consistent with objectives, and (h) about 60 per cent of the modules were rated as fitting within the time constraints of schools.

Classroom Observation. A four-point forced-choice rating scale was developed for classroom observation of various teaching activities. Many statements were irrelevant in the context of teaching in Pakistan, so another category was added to indicate that the activity statement was "not applicable to what was happening in the classroom." This was checked by observers in over 50 per cent of the observed classrooms for four activities, between 40 and 50 per cent of the classrooms for three activities, and between 22 and 33 per cent of the classes for four activities. Obviously, there was scant opportunity to see good teaching when visiting a classroom.

Favorable ratings were given to the following percentage of classrooms on the listed teaching activities:

- Clarification of objectives (16 per cent);
- Engagement of pupils prior learning (7 per cent);
- Demonstrating concept-related activities (12 per cent);
- Prompting pupil participation (23 per cent);
- Allowing independent pupil work (9 per cent);
- Using reinforcement (25 per cent);
- Asking questions to encourage participation (32 per cent);
- Asking questions to monitor pupil understanding (32 per cent);
- Creating pupils' active participation (25 per cent);
- Summarizing lessons (7 per cent);
- Assessing student learning (16 per cent).

A provision was made to record classroom observations in those cases where most of the categories in the classroom observation rating scale appeared to be irrelevant. Results were (a) no teacher in an observed classroom used a PEP-2 Learning Module, (b) nothing was happening or there was no teaching going on in 21 per cent of the classrooms, (c) the teacher was teaching more than one class in 14 per cent of the classrooms, (d) there was minimal teaching in four per cent of the classrooms, (e) teachers read from a textbook in 53 per cent of the classrooms, (f) some of teaching aids were used in seven per cent of the classes.

Teacher Interviews. Classroom observation was followed by an interview with the same teacher whose classroom was observed. Of the 51 teachers interviewed, only two were less than matriculate and a large majority (88 per cent) were matriculates. A very large

proportion (93 per cent) were PTC trained. Most (85 per cent), were under 25 years of age, so 85 per cent also had less than five years teaching experience. About 82 per cent of the teachers were 'local', which means that they can communicate in the same language spoken by children in their classes. The most common situation was that of a teacher remaining with the same group of pupils when the class was promoted to the next grade. A very large majority, 92 per cent, had gone through at least one cycle of Learning Module training, so training did take place. Most of the teachers mentioned having attended refresher courses, but they had little to offer about what they learned and remembered from those courses.

The second part of the teacher interview was related to teaching practices. The most startling finding of this project is that not a single teacher used any specific module for teaching in the observed classrooms. Teachers were still asked their opinions of the learning modules. Sixty-one per cent of the teachers used no material at all in their teaching; 37 per cent used textbooks and of these only eight used a chalkboard along with textbooks. Only two teachers used material from the Primary School Teaching Kit and only one teacher used local material. When asked if they ever used Learning Modules, 72 per cent stated they did not; 18 per cent claimed occasional use. Thirty-eight teachers (70 per cent) were of the opinion that Learning Modules do not help in textbook teaching. Forty-seven (87 per cent) believed that Learning Modules do not help to prepare pupils for final examinations. Thirty-seven teachers (69 per cent) believed that the modular approach is not better than the "old" teaching approach, and the same percentage think that Learning Modules would not contribute to greater pupil participation. Forty-three teachers (80 per cent) had no opinion on whether Learning Modules made teaching and learning better or worse; the same number felt that the Learning Module approach was not worth continuing; 24 teachers (44 per cent) stated they had received no training. When asked why Learning Modules are not being used, 87 per cent of the teachers stated that there was not enough time, 50 per cent said there were not enough teachers, and 46 per cent said no one asked them to use them.

School Visits. Because school examinations are so important to so many persons, a special set of interview questions was developed in order to learn practices that schools follow to examine their pupils. The assessment of pupil learning in the primary schools is a mixture of unstandardized methods using oral and written procedures. A third of the teachers interviewed indicated they used no testing method. Classroom teachers mark examinations and either record these marks in log books or elsewhere. Results are reported to parents by the pupils themselves; ASDEOs learn of examination results from log books or from copies of records; there is no periodic testing in half of the schools visited. In schools with periodic testing, most do so quarterly. There are virtually no answer papers or solved answer papers available for inspection. Passing marks vary from school to school, but 33 per cent appears to be the most frequently applied standard. Marks are used mainly to pass or fail students.

Learning Coordinator Focus Groups. In PEP-2, the intention was that Learning Modules were the significant educational innovation and Learning Coordinators were the significant change agents. Most Learning Coordinators saw themselves as helpers of teachers but in very non-specific ways. Their ideas of educational practice appeared to have come from the traditional ones that characterize teacher training in Pakistan. Their idea of better teaching was to help teachers adopt AV material. Their selection was made at the district level. Most Learning Coordinators do not recall being exposed during training to the concept of Learning Modules. They never referred to intended functions of Learning Modules and were unclear about their specific role in improving the quality of teaching.

Learning Coordinators are responsible for transporting modules to schools. Their responses became vague when asked when and how many modules were distributed. They are, however, very clear about difficulties in introducing any innovation in primary education. They considered the present examination system as a major stumbling block.

Teacher Focus Group. Teacher focus group sessions aimed to discover teacher perceptions of the Learning Modules and how Learning Coordinators influenced their teaching. Teachers appear to have acquired the idea that PEP-2 training is about "better teaching," but they are unable to distinguish the training they received from their earlier PTC training; they believed that training was done to reinforce PTC training. The teachers never understood that modules are not simply another model lesson. They came to training expecting ordinary training and that is what they got.

Teachers in the NWFP were much more positive about the quality of their training than were those in Balochistan. Many teachers also thought that Learning Coordinators had received only ten days of training just as they did, and that they themselves could do a better job than the Learning Coordinators. They thought modules were forms of lesson guides, books with teaching examples, booklets with directions for applying better teaching methods, teacher guides, books of examples, books with content, and so on. No evidence was provided by any member of any teacher focus group that indicated real knowledge about the modules. The main problem was that teachers did not clearly see the link between the Learning Coordinators and the Learning Modules.

Learning Coordinators were mostly seen as persons who come to school about once a month, check pupil and teacher attendance, and sometimes try to help out when a teacher poses a problem about a teaching difficulty with a particular lesson or concept. In Balochistan some teachers thought that Learning Coordinators were supposed to visit schools once a year.

Some teachers understood perhaps did not perceive the conflicting practices of the Learning Coordinators and regular supervisors. What they did know was that textbook-related is what counts, and that teachers are evaluated by the SDEOs who check how many pages in a textbook have been completed.

Conclusions. The central conclusion is that PEP-2 started with a potentially good strategy for school improvement, but its management by established senior staff and its training by those coming from a highly conventional background of teacher training caused the PEP-2 concept to be degraded and PEP-2 to lose its direction. PEP-2 introduced new ideas that were outside the norms and values of the organizations that administered the project. Enthusiasm for PEP-2's promise led to a disregard of these organizational impediments to successful implementation. Early formative project evaluation could have alerted persons to the fact that the initial PEP-2 concept had been abandoned for the failed ideas that keep primary education in the sorry state it is. The effect of the change was that teachers and Learning Coordinators may have believed that they were involved in a new initiative, but there was nothing in their performance that suggested a change in their skills or attitudes. The Learning Modules were not used. When tools intended to help trainers improve teacher skills are not used and the trainers themselves are not clear about what these tools are for, there is no possibility for intended effects to result.

Recommendations. The recommendation made was to initiate a school improvement project that builds upon the gains and mistakes of PEP-2 and to a large degree on the original intentions of PEP-2 which were unrealized. The project consists of management, curriculum, implementation, and evaluation components. Each component requires detailed plans. Major products are lesson units which are to be integrated with textbooks. Major activities are training and evaluation. Trainers and teachers are involved in lesson unit production. Periodic evaluation and review is integral to the project so that effective decisions can be taken.

Acknowledgements

Work on this project was contracted between the Educational Development Center (EDC), Newton, Massachusetts. and the National Institute of Psychology (NIP), Centre of Excellence, Quaid-i-Azam University, Islamabad, on September 3, 1992. Dr. Muhammad Pervez, Associate Professor in the National Institute of Psychology was assigned the responsibility of undertaking this work and writing its final report.

During negotiations, Dr. Harold Freeman, and later Dr. Mitch Kirby of EDC, proved very helpful in understanding the Institute's needs and often accommodated these during budget preparation and preparation of the project agreement. The project could not be completed within the stipulated period of time. Dr. David Sprague and Dr. Sara Tirmazi of the USAID Mission in Pakistan were extremely gracious in understanding the difficulties which delayed completion of the project. Dr. Karl Clauset of EDC also proved very helpful when the project ran into funding difficulties. I wish to thank these people for their help.

Dr. John Bowers, EDC Consultant to this project, visited schools with Dr. Pervez during the project's planning phase in September. During his second visit towards the end of this project, he provided help and inspiration for report. I personally wish to thank him for his patience and understanding.

Dr. Pervez was able to gather a very capable team of professionals for this project. These team members took time away from busy schedules on their permanent jobs and from their families. They devoted much time and hard work to this project. NIP owes special thanks to them.

A large number of very helpful people, primary school teachers, Learning Coordinators, SDEOs, DEOs, DDs and PDs provided support to the team of this project. It was only due to cooperation of these people in five different districts of Pakistan that this study was made possible. I especially wish to record my thanks to the Directorates of Primary Education in NWFP and Balochistan, who not only permitted the research team to visit their schools but were also more than willing to provide logistics support wherever requested.

I also wish to thank Dr. Sara Tirmazi, Dr. Wade Robinson, Mr. Bashir Parvez, Dr. Karl Clauset, and Ms. Mae Chu Chang for their valuable comments on the draft of this report. The comments of Mr. Bashir Parvez and Ms. Mae Chu Chang, being more cogent, were specially useful for the improvement of this report. Therefore, we owe them special gratitude.

Lastly, I congratulate Dr. M. Pervez for taking this work to its logical end. I am sure this project will be an honorable addition to the research profile of NIP.

Dr. Pervaiz Naeem Tariq
Acting Director
April , 1993

Table of Contents

Executive Summary	i
Acknowledgements	
An Evaluation of the Development and Implementation of Learning Modules in Primary Education	
	1
Background of Second Education Project (PEP-2)	1
Background of Learning Modules Evaluation Project	1
The Evaluation's Initial Terms of Reference	2
Initial Field Visits for Evaluation Planning	3
Refocussing the Evaluation's Terms of Reference	3
Administrative Preparations for Evaluation	4
Procedures	
Classroom Observations and Follow-up Interviews	5
Classroom Observations	5
FIU/PIUs Interviews	5
Teacher Interviews	6
School Visit Form	6
Learning Coordinators and Teachers Focus Groups	6
Sampling	
Selection of Learning Coordinators for Focus Groups	7
Background Characteristics of Learning Coordinators	7
Selection of Schools and Teachers	8
Selection of Learning Modules	8
Findings	
FIU/PIU Interview Findings	10
Learning Module Findings	13
Learning Module Ratings	15
Classroom Observation Findings	21
Teacher Interview Findings	25
School Visit Findings	28
Learning Coordinators Focus Group Findings	31
Teacher Focus Group Findings	34
Conclusions	36
Recommendations	40

An Evaluation of the Development and Implementation of Learning Modules in Primary Education

This report summarizes findings from an evaluation of the implementation, use, and effectiveness of learning modules that were designed and developed under the Second Primary Education Project (PEP-2). The project's aim was to improve primary school teaching in Classes 1 through 5 in Pakistan through implementation of a modular approach. Developed modules were based on learning concepts found in textbooks as well as goals and objectives stated in the national curriculum. Modules were distributed to primary schools in the North West Frontier Province (NWFP), Sindh, and Balochistan. This evaluation is limited to module usage in the NWFP and Balochistan.

Background of Second Education Project (PEP-2)

In November 1984, the World Bank Appraisal Mission prepared an Aide Memoire to record the final understanding between the World Bank and the Government of Pakistan for a proposed second primary education project. This second project was a continuation of the First Primary Education Project (PEP-1), and in many ways funds and activities of the projects overlapped for a period of time. The total project cost at that time was expected to be about 1,163 million rupees, of which about 834 million was local cost and 329 million foreign cost. This was a large project by Pakistani standards. The major part of this amount was to be spent on providing physical facilities such as buildings, furniture and vehicles. A relatively smaller amount, about 99 and 27 million rupees, was earmarked for educational materials and training, respectively.

One important lesson from PEP-1 was that its teacher training component was unsatisfactory. Therefore, PEP-2 planners decided to develop Learning Modules as an educational innovation for primary school education in Pakistan.

The above-mentioned Aide Memoire stipulated as a condition for further negotiation that the Government of Pakistan would "prepare a detailed work plan and schedule for the development of tested learning modules in each subject, with a provision for the preparation of early prototypes for ... approval." For World Bank Board presentation, the Government was asked to complete and field test 72 learning module packages in mathematics and science and a detailed schedule and syllabus for in-service courses.

As a step towards fulfilling this condition, in December 1994 the Primary Education Development and Expansion Project (PEP-1) of the Primary Education Wing of the Government of Pakistan convened a meeting of "specialists and experts" for "initiating necessary steps for the preparation of Learning Modules."

Background of Learning Modules Evaluation Project

The major part of PEP-2 came to an end towards the closing months of 1992. Therefore, before embarking upon a next phase of credits for the development of primary education in Pakistan, and to determine the direction for further inputs, the World Bank decided to conduct an objective and independent evaluation of the Learning Modules component of the project. The evaluation's terms of reference were established by the World Bank and USAID was requested to arrange for the evaluation. USAID contracted with the Education Development Center (EDC), a US-based educational research agency, for this work. EDC

selected the National Institute of Psychology (NIP), Quaid-i-Azam University, Islamabad, to undertake this evaluation, and contracted a US-based consultant to advise and assist in this work. NIP has a long background and experience of educational research in Pakistan.

EDC first contacted NIP in November 1991 to learn whether it would be interested in carrying out the evaluation. NIP showed its willingness and started negotiating a budget with EDC. Due to various reasons, the project, which initially was expected to be undertaken at the earliest convenience of NIP, was later planned to be started in March 1992. In April 1992, due to summer vacations in Pakistani schools, the project was shelved until September 1992. The project agreement between NIP and EDC was finally signed in early September 1992, although activities had already started in late August with newspaper advertisements for the recruitment of field research staff. Dr. John Bowers arrived in Pakistan on 4 September 1992 to assist NIP in preparing an evaluation plan. According to this plan approved by the USAID Mission in Pakistan, work was expected to be completed by the end of January 1993. However, completion was delayed for two more months due both to difficulties in the timely receipt of funds in Pakistan and unexpected closing of schools because of political disturbances on two separate occasions.

The Evaluation's Initial Terms of Reference

Evaluation information specified for collection pertained to the modules' effectiveness in improving teaching in ways that would encourage sponsors and/or the Government of Pakistan (GOP) to adopt all or some aspects of the modular approach and to explore alternative approaches. Evaluation terms of reference listed in the contract focussed upon the following:

- (1) Module objectives' linkage with the objectives in textbooks and the National Curriculum;
- (2) Assessment through classroom observation of changes in teacher behavior in accordance with the stated objectives of a sample of learning modules;
- (3) Assessment through classroom observation of changes in student behavior in accordance with stated module objectives;
- (4) Assessing gains in student achievement;
- (5) Strengths/weaknesses of the modular approach in terms of its use, feasibility, acceptability, and its ease and frequency of use by teachers and students.
- (6) Factors constraining the use of modules such as lack of materials, physical facilities, supervisory support, and incentives.

These broad terms of reference called for the formative evaluation of four aspects of the modular approach:

- (1) *Products* — perceived characteristics of learning modules;
- (2) *Processes* — implementation, training, guidance, and supervision activities by trainers and Learning Coordinators established to enable teachers to use modules and to apply the modular approach in their teaching;
- (3) *Effects* — observed changes in teacher activities and behaviors that are reasonably attributed to the implementation of the modular approach;
- (4) *Effects* — observed changes in pupil learning and performance that are attributed to teachers' use of the modular approach.

Initial Field Visits for Evaluation Planning

Expectations about products, processes, and effects to be evaluated were preliminarily examined during a series of initial site visits carried out by Drs Pervez and Bowers in order to develop the evaluation plan. Visits were made to schools and administrative offices in Balochistan and in the North West Frontier Province (NWFP). Main conclusions of the evaluators were:

- Learning modules had been produced and distributed to schools in both provinces. Provincial Implementation Unit (PIU) staff asserted that the PEP-2 Learning Coordinators were working well in the field and were assisting teachers to use modules and to implement the modular approach.
- Teachers in schools visited appeared to have next to no idea about the content or organization of modules. Teachers did not use modules and furthermore did not closely associate the modular related training received from Learning Coordinators with their teaching.
- Learning Coordinators spoke glibly about the modular approach and how the design of modules will increase student participation in active learning. They assured evaluators that their supervisory and training activities facilitated teachers' use of modules.
- ASDEOs interviewed, who are part of the primary supervisory system, uniformly dismissed the work of the Learning Coordinators, although they recognized the value of the modular approach and looked forward to absorbing the cadre of PEP-2 Learning Coordinators into the official supervision system.

Refocussing the Evaluation's Terms of Reference

These early visits strongly suggested that two critical groups – the teachers and Learning Coordinators, essential for implementing the modular approach, had experienced major problems when confronted with the task of implementing the modular approach.

This PEP-2 modular approach very possibly imposes overwhelming demands on teachers who are trained to teach almost exclusively from textbooks, are required usually to teach more than one class level, are limited in their potential effectiveness because of a relatively short school day, and do not have readily available instructional resources. The evaluators concluded that while the teaching concepts and structures underlying use of the modules may be theoretically sound and acceptable, the actual context of implementation may prevent successful adoption by many teachers.

Learning Coordinators recruited and posted under PEP-2 had nominal but not authoritative status, and functioned outside the official supervisory system's chain of command. ASDEOs furthermore resented their receiving perks not shared by official inservice staff. Teachers stated that their training by Learning Coordinators was infrequent and characterized by poor activity plans. However, since steps were underway to bring the PIUs within the Directorate of Primary Education, there was general agreement that future supervision would improve through attention to highly directed training, supervised inservice, and well-monitored school visits.

The evaluators concluded that it was correct to focus evaluation on the processes and effects listed above. Nevertheless, because it was possible that very few teachers used modules; if true, there could be no effect that changed teaching/learning behavior and students' achievement. The evaluation was then slanted to explore in greater detail (1) reasons for limited implementation of the modules and (2) failures to institutionalize the

modular approach. Purposes of the evaluation then included explaining failures in the modular approach and developing recommendations for other ways to strengthen teaching through supplemental materials.

An important priority of the evaluation was seen to be the identification of problems that arise from the teaching context which impede module use and that may be dealt with by more focussed training and restructured inservice. Problems in the modules' supplemental use with textbooks also needed to be identified in order to consider other possible ways to integrate add-on material with textbooks.

Administrative Preparations for Evaluation

A senior staff member in NIP, Dr Pervez, with considerable research experience in primary education and child development, was assigned as the Principal Investigator for this project. Since the scope of the evaluation dealt much less with the quantification of facts and much more with the critical analysis and interpretation of information about the modular approach, it was decided to involve more experienced and senior researchers in this work. An attempt was made to locate psychologists who had experience and competence to conduct in-depth clinical interviews which go beyond surface appearances.

Researchers at this level were generally working at senior positions in various research and teaching institutions and were not available for project work for extended or continuous periods of time. Therefore, their services were obtained on a contract basis for a limited number of days in the field. It was essential to hold orientation and training sessions. Three skills were needed: (1) classroom observation skills, (2) interviewing skills, and (3) skills in conducting focus group sessions. Four senior staff members of NIP proficient in these skills conducted the orientation and training sessions.

In order to evaluate a sample of Learning Modules, a rating scale was developed in the planning phase of the project. To establish rating reliability, it was decided to rate a set of three modules using three raters. One was an educationist with experience in reviewing textbooks and other educational documents – this rater was a woman teaching in education in a local college. The second rater, also a woman, has a long career in psychological research, especially at the primary school level, as well as experience in content analysis. The Principal Investigator was the third rater. Ratings were made on 22 four-point scales for each module. Rating agreement was 72 per cent between the first two raters and 85 per cent between the second and third raters. Points of disagreement were discussed to arrive at a consensus. Another set of three modules were rated and rating agreement was 93 per cent or higher for all raters. This was accepted as sufficiently high so that subsequently all ratings were done by the first two raters.

Initially an attempt was made to develop two research teams – one based in Karachi to work in the Balochistan province and the other based in Islamabad to work in the NWFP. However, the Karachi team for various reasons could not be mobilized. The teams which eventually collected data from the field included the Principal Investigator and seven other psychologists (three women and four men). All of these psychologists had an extensive background in child development, educational psychology, and research.

It was decided to field trial all instruments and techniques sharpened during the orientation and training sessions. Therefore, the team selected a project school in Tofkian in the Haripur district. This exercise facilitated further improvements of the data collection instruments and pinpointed shortcomings in the training program. Additional sessions were arranged to overcome these difficulties.

After an extended period of preparing the research team and refining data collection instruments, actual data collection started in the Haripur district of NWFP in November 1992. Haripur was followed by Abbottabad and then Sawabi. Since schools in the Pishin

sample district of Balochistan are closed during the winter months of December to March, it was planned to proceed immediately to Pishin after completing Sawabi. However, the Pishin district could not be completed because of political agitation; all schools in Balochistan were closed down. In a meeting with the USAID Mission in Islamabad in early February, it was decided to drop the remaining sample district of Dera Ismail Khan in the NWFP district

and to finish data collection in the two districts of Balochistan. Due to administrative reasons, the next leg of data collection only became possible in the first week of March 1993, when data were obtained from the Turbat and Pishin districts of Balochistan.

Procedures

Classroom Observations and Follow-up Interviews

The strategy adopted for the evaluation of module use was to go directly into primary school classrooms and observe the effects of learning modules on classroom practices. It was assumed that if teachers had Learning Modules available, they would have been trained how to use them. If so, then classroom practices should be different from what is expected in typical Pakistani primary schools.

Therefore, classroom observation came first. One member of the field research team would visit a sampled school and before entering the school, would arbitrarily select for observation one particular class for one school period (if there was a period, or for 45 minutes if not).

The observation period was followed by an interview with the teacher whose class was observed. After the interview, school site information was obtained from the head teacher and other teachers in the school. This part of the evaluation involved the use of four instruments: (1) a Classroom Observation Form, (2) a Classroom Observation Description, (3) a Teachers' Interview Form, and (4) a School Visit Form. The first parts of the last two instruments aimed at collecting demographic information about the teacher interviewed and the school visited.

Classroom Observations

The Classroom Observation Form used a number of four-point rating scales under the assumption that raters would observe classroom teaching based upon the use of learning modules as part of an essential teaching strategy. Because there were clear indications from initial planning visits to schools that this was not apt to be true, a second classroom observation record was developed for recording observations even though teaching did not use modules. This was called the Classroom Observation Description, on which (in case no module-based teaching occurred) the observer described classroom activities. Categories were developed to classify the type of teaching taking place in classrooms. All classroom observations were then coded on the basis of these categories.

FIU/PIUs Interviews

During the planning of the evaluation, it was realized that a significant factor affecting the success of the Learning Modules initiative was the administrative structure of PEP-2. It was necessary to obtain the perspective of persons involved in administering this project. The principal investigator interviewed three categories of people involved in the project's administration. The top level were persons in the Primary (and Non-Formal) education wing of the Federal Ministry of Education. This wing was headed by a Joint Secretary level officer, who, for work related to PEP-2, was designated as chief of the Federal Implementation Unit (FIU) of the project. This officer is renowned for his dynamism and communication skills, and remained chief of PEP-2 for most of its active period. He was

assisted by a deputy secretary who also remained a member of the FIU throughout most of this active period. At the time of evaluation both had left the project. However, the deputy secretary, now a retired government officer, is living in Islamabad and was available for long interviews.

The second category of persons were responsible for project administration at the provincial level. The top personnel in this category were titled Project Directors and were heads of Provincial Implementation Units (PIUs).

The third category were persons who had remained associated with the project either at district levels or had been involved with the project on a part time basis as trainers of Learning Coordinators, module writers, and reviewers of modules. DEOs and their staff, being right in the field, was the most well informed group of people. However, often their opinions were heavily loaded against Learning Coordinators. Most of these persons held permanent positions at various teacher training institutions or in curriculum development and research centers in different provinces. A small number of persons from departments of education at various universities had also been involved in project activities.

Interviews were typically conducted in informal settings. Interviewers adopted a style of informal discussion about problems and issues in primary school education in Pakistan, while emphasizing aspects of the PEP-2 experience. All those interviewed were assured that their responses would be treated confidentially.

All of the FIU/PIU interviews were conducted by the Principal Investigator and were basically in an unstructured format, so notes were developed from interviewee responses. Conclusions drawn from these interviews are based upon the notes of the Principal Investigator.

Teacher Interviews

All of the teachers whose classes were observed were interviewed following the observation. This follow-up interview gave the evaluators a more candid view of the classroom. Because teachers were unaware of the purpose of classroom observation, they did not deliberately use learning modules as part of their teaching during observations.

The first part of the teacher interview was used to obtain basic background information about teachers. This information was coded and entered into a computer data file. Teacher interviews were structured. Teacher interview responses were transcribed on sheets with open-ended spaces for answers to specific questions raised by interviewers. Answers were later categorized and enumerated for reporting.

School Visit Form

Teacher interviews were followed by a discussion with the head and other teachers in the school; these discussions obtained school profiles, and information was recorded on a "School Visit Form." The first part of this form consisted of precoded items for computer entry; the second part asked questions about educational practices in the school, with special attention to pupil evaluation and examination practices. Responses to this second part were also categorized and coded for reporting.

Learning Coordinators and Teachers Focus Groups

Besides direct structured interviewing, the use of teacher and Learning Coordinator focus groups was the second evaluation strategy adopted in the study. Members of the team, called moderators, conducted focus groups composed of Learning Coordinators and teachers. Discussions in these groups, with permission from group members, were recorded on audio cassettes. Using their notes and listening to audio recordings, moderators filled out

Focus Group Reporting Sheets. Two sets of these sheets were used to cover all of the relevant issues specific to Learning Coordinators and teachers. Responses to questions about these issues, which were assumed to be a reflection of the basic consensus of the group, were later categorized and enumerated. These enumerations along with information on the Focus Group Reporting Sheets were used to report findings for focus groups.

Sampling

Selection of Learning Coordinators for Focus Groups

NWFP: The number of Learning Coordinators varies in the three evaluation districts of the NWFP. There were 19, 31 and 22 male Learning Coordinators, respectively, in the Haripur, Abbottabad and Sawabi districts; there were 8, 14, and 7 female Learning Coordinators in these respective districts. From a list of Learning Coordinators provided by the District Education Office, ten Learning Coordinators were randomly selected with the assumption that at least seven of these would show up for the focus group. The following number of Learning Coordinators participated in the focus groups in the NWFP.

Balochistan: Discovering the number of Learning Coordinators in the two evaluation districts in Balochistan was more complicated. The PIU at Quetta was about to be dismantled, and in the absence of an experienced project member, it was difficult to obtain needed information. The DEO's office was uncertain about the number of Learning Coordinators. Finally a sample of male Learning Coordinators was drawn from a list of names recalled by the staff in the DEO office. Only three female Learning Coordinators were ever appointed in the Pishin district and only two joined. In Turbat the situation was even more discouraging, where one Learning Coordinator was appointed only last year and she has never worked in the field. As detailed in Table 1, a total number of 60 learning Coordinators participated in focus groups in both provinces.

Table 1.
Number of Learning Coordinators in Focus Groups

Provinces	Districts	Number of Learning Coordinators		
		Male	Female	Total
NWFP	Haripur	7	5	12
	Abbottabad	7	7	14
	Swabi	9	8	17
Balochistan	Turbat	8	1	9
	Pishin	6	2	8
Total		37	23	60

Background Characteristics of Learning Coordinators

In the NWFP, the academic qualifications of 26 out of the 36 teachers (72 per cent) were more than the minimum qualification necessary to become a Learning Coordinator; i.e., matriculation. On the other hand, 14 out of 17 Learning Coordinators (82 per cent) were not qualified above the matriculation level.

In Balochistan, no Learning Coordinators were qualified above the PTC level, while 20 of the 36 NWFP Learning Coordinators were qualified above the PTC level; thirteen of these were CT and seven held B.Ed. degrees. Ten Learning Coordinators in the NWFP were head

teachers before becoming Learning Coordinators; 30 of these were in Grade 11. All the Balochistan Learning Coordinators were in Grade 10 or below. Balochistan had seven Learning Coordinators with more than 20 years of teaching experience while none of the NWFP Learning Coordinators showed this level of seniority.

However, in Balochistan and NWFP a total of 34 out of 53 Learning Coordinators had more than 10 years of teaching experience. Twenty-six Learning Coordinators had completed three or more cycles of training, but very few had undergone any other kind of in-service training.

Selection of Schools and Teachers

Selection of schools for classroom observations and teachers' interviews, as well as the selection of teachers for focus groups was done at District Education Offices. The Swabi district was divided into two sub-divisions, and one, Chota Lahor, was selected. In the NWFP, schools in districts are clustered in pay centers. There were 25, 41, and 31 pay centers for male schools and 14, 9, and 11 pay centers for female schools in the Haripur, Abbottabad and Swabi districts, respectively.

The first step was to randomly select two male and two female school pay centers from the list of school pay centers obtained from each District Education Office. Then a list of teachers was obtained for the selected centers, and from this list 15 teachers were randomly selected to insure that at least ten of these would be available for focus group sessions. However, in selecting male pay centers, the consideration was made that female centers, as far as possible, would be in close proximity to the selected male centers in order to facilitate travel logistics.

Since schools in Balochistan were not organized around pay centers, two clusters of geographically proximate schools were randomly selected for the sampling of male schools, and one cluster was randomly sampled for the sampling of female schools.

Selection of Learning Modules

Sets of modules printed for B and C level training and distribution to schools for teaching were collected from the PIUs of the NWFP and Balochistan.

In the NWFP, modules existed in two forms. In the earlier phase of the project, each module was published as a separate document. However, following a later decision based on easier teacher use, modules were printed in sets, where each set was a collection of all modules in a specific subject for a specific class (for instance, all the mathematics modules for Class 3 were published in one booklet). Sixteen booklets in all, containing a total of 176 modules, were published in the NWFP; details are shown in Table 3.

Balochistan did not follow NWFP's procedure and instead published each module separately. A large number of modules examined had "second edition" printed on them, but a careful look indicated that "second edition" meant second printing without any improvements or changes. Since Balochistan modules were selected after selection of NWFP modules, it soon became clear that the mathematics, science, Islamiyat, and Class 5 social studies modules were actually the same as those in the NWFP. All of these, however, did not originate in the NWFP. Some were written in Balochistan and some in Sindh, and perhaps these were shared by all three provinces. Among the modules printed in Balochistan 56 were identical to modules printed in the NWFP. Therefore, these were excluded from the sample. Modules for Urdu in all classes and Class 4 modules for social studies were original to Balochistan; the numbers were 19 for Urdu and 11 for Class 4 social studies. The sample of modules from Balochistan, therefore, consists of 13 Urdu and 3 social studies modules. Table 4 shows the universe of 289 modules, 176 from the NWFP and 113 from Balochistan, as these were collected from PIUs of these provinces. However,

the question that how many modules were originally prepared in NWFP and how many in Balochistan cannot be answered unless all the modules are also collected from Sindh. From the total NWFP and Balochistan and then by excluding duplicated modules between these two provinces, a sample of 76 modules to be evaluated was drawn.

Table 4.
Universe from which Learning Modules were sampled

Provinces	Classes		S u b j e c t s				Total
	Integrated	Urdu	Mathematic	Science	Social Studies	Islamiat	
NWFP							
	1	16	12				28
	2	12	11				23
	3		13				13
	4	12	12	9	12	12	57
	5	11	9	11	12	12	55
	<i>Total</i>						176
Balochistan							
	1	6	2				8
	2		10				10
	3		7	4			11
	4		13	4	8	11	47
	5		11	5	10	11	37
	<i>Total</i>						113
Grand Total	6	92	72	38	46	35	289

Selection of Learning Modules for Evaluation

Approximately one-third of all modules were selected for evaluation. Sampling attempted to be proportionate by subject and class. Altogether, 58 modules from the NWFP and 16 modules from Balochistan to be evaluated was drawn, as shown in Table 5.

Table 5.
Sample of Learning Modules for Evaluation

Province	Classes	S u b j e c t s					Total
		Urdu	Math	Science	Social Studies	Islamiat	
NWFP							
	1	5	4				9
	2	4	4				8
	3		4				4
	4	4	4	3	3	4	18
	5	4	4	3	4	4	19
Balochistan							
	1	2					2
	2	3					3
	3	2					2
	4	3			3		6
	5	3					3
Total		30	20	6	10	8	74

Findings

FIU/PIU Interview Findings

This section is based on interviews with FIU/PIU personnel. Since the author of this report is an experienced observer and researcher of the primary education system of Pakistan, it is likely that his background information and opinions about this and many other projects will emerge, as they should in the evaluation. However, care has been taken not to ascribe anything to PIU/FIU staff which did not originate from their interviews.

In the 1973 Constitution of Pakistan, education is a concurrent subject, which means that responsibility for education is shared by the Federal Government of Pakistan and the provincial governments of its four federated provinces. Foreign loans are customarily negotiated by the Federal Government which also sets the basic course for educational policy, but these policies are implemented by the provinces. In order to administer PEP-2, one Federal Implementation Unit and three Provincial Implementation Units (PIUs) were created. The present evaluation concerns only two of these three provinces.

Many problems identified during interviews with FIU/PIU staff are not unique to the PEP-2 project. Most decisions in Pakistan are "top-down" despite claims to the contrary, so even though the provincial education departments met many times to plan and execute the implementation of PEP-s, the Federal Government was in charge because the project involved a foreign loan as its major driving force.

Two key terms in PEP-2 are those of Learning Modules and Learning Coordinators. Both are so foreign to Pakistan that they can not be properly translated into a Pakistani language. One translation for "Learning Coordinator" used in Balochistan is "Rabta moalam", which translates back to English as 'Link Teacher.'

Although the project chief at the Federal level appeared to be highly convinced and enthusiastic about the value of Learning Modules and Learning Coordinators, the first reaction of staff in the field was that PEP-2 represented another "alien notion." PEP-2's ideas were not seen as emerging from the real needs of Pakistani schools, teachers, and pupils. From the beginning, PEP-2 was perceived as not integrated within the existing context of Pakistani education.

There was a highly bureaucratic approach to PEP-2's implementation process. In many meetings after PEP-2 started, whenever a question was asked about the project's feasibility, a typical reply was that PEP-2 is a Government decision and government servants are expected to implement it. Successful implementation of Learning Modules by key implementation agents, the Learning Coordinators, entailed carefully working out a sequence of links.

With effective control of schools and teachers by regular provincial departments of education represented in the field by DEOs, parallel PEP-2 PIUs were created in each project province. This meant that on many occasions, the PEP-2 system competed with and at times contradicted the regular system.

While the FIU was formulating a strategy to write modules, many persons questioned their ability to do so in the absence of any control over the curriculum and textbooks. At the same time, the Curriculum and Textbooks Wing of the Federal Ministry of Education was not only involved in a major revision of primary school curriculum and textbooks but was also entertaining the idea of producing something similar to the PEP-2 Learning Modules. It was also writing Teachers' Guide Books for primary schools. If these initiatives by the Curriculum Wing had been implemented, many difficulties would have been created for teachers and schools.

FIU staff were so enthusiastic about the concepts of Learning Coordinators and Learning Modules that they apparently anticipated such great educational improvement that any issues related to the curriculum, textbooks, supervision by DEOs, and the examination system were swept aside.

Technically speaking, PEP-2 was expected to follow the National Curriculum. However, when a group of early module writers prepared the objectives sections of prototype modules, they realized that objectives in the National Curriculum and in textbooks had never been amplified to the extent that they could be translated into "can do" performance-based objectives required by PEP-2 module specifications. The only choice for them, decided by the FIU was to interpret and add objectives, as appropriate, to the curriculum. The thinking at that time, as pointed out above, was that PEP-2 can and would overtake the National Curriculum. The problem now seen is that the two sets of objectives – those for the modules and those from textbooks and the National Curriculum, do not tightly match.

Recruitment of personnel with appropriate experience and competency for a limited-time project is always been a problem because there is a very restricted employment market for higher level jobs in education (similar to most other sectors). Many persons prefer the security of their regular positions. The choice available to most projects is to obtain staff on secondment (called "*on deputation*" in Pakistan). Even those with appropriate experience will have divided loyalties. Lending departments can recall seconded persons whenever necessary, and the seconded persons will often return to their parent departments whenever better opportunities arise.

Frequent postings and transfers with no serious consideration of ongoing work requirements are very common. A game of "musical chairs" exists for the dozen top level positions at the Federal Ministry, a fact well known to anyone aware of things at Islamabad.

A project that aims at introducing an absolutely new and untried innovation in a very traditional society requires a dedicated team with a firm and a relatively long-term commitment. This was rarely the case in the PIUs. One very important person in the FIU never became converted to the possibility of introducing any innovation into Pakistan's school system. This very player stayed with the project for the longest period of time.

Recruitment of positions in the PIUs was much worse than that at the FIU. The provincial bureaucracy fiercely guards its autonomy. The placement of Project Directors in the PIUs remained an ongoing issue for the FIU. The average period of posting for a PIU Project Director was no more than two years, and many PIUs were without a Project Director for extended periods of time. Selection of PIU Project Directors became a complicated problem in the provinces. The job carried attractive benefits but was risky because it meant leaving the administrative mainstream, and seniority is one of the most respected qualities of a bureaucracy. Those with the most seniority move to the top and hold very secure positions where it is possible for matters like retirement to become more important than tasks. A senior level staff member is likely also to find resentment from colleagues because of promotion, and these are the very persons from whom he needs honest and cooperative effort. The situation at one point became so bad in one province that when hostility between the Project Director and a senior official in the provincial Department of Education was known at the school level, persons in the DEO's office were unwilling to allow Learning Coordinators to enter the schools.

The recruitment of Learning Coordinators for the districts posed similar problems to those just discussed. One can easily imagine that a head teacher might take exception to the fact that his Learning Coordinator, perceived as less competent than himself, had previously served under him and was now supervising and directing his teaching because he had connections at the DEO's office or links in Quetta or Peshawar.

The idea of Learning Modules which, to the knowledge of the most seasoned hand at the FIU, came from Washington, D.C., travelled quite a distance before ending up in a dusty

cupboard of a far flung school in a remote arid village in Balochistan. Of course this travel did not occur physically; printed modules ended up in the cupboard. The important point is that idea of the modules grew more ambiguous as responsibility for module design changed hands too often. With new postings, transfers, and fresh recruitment over a period of more than five years, the original PEP-2 ideas suffered continual erosion. The comments below of one Project Director, who came to the project late but stayed too long to damage it, dramatize this point. This particular Project Director knew next to nothing about PEP-2's conception of Learning Modules, but he still managed to get modules written, and the stamp of his ideas on modules written under his supervision is almost certainly not what PEP-s planners intended.

"There was nothing new in Learning Modules; you know the lessons plans done in Elementary (PTC) Colleges. The writing of modules was very slow before I came down as Project Director. I quickened it up by putting many people to work. It is simple. Take a lesson from a textbook. Tell teachers how to explain it to pupils. That's what they like to call Learning Modules. You know these foreigners. Old wine in new bottles. I myself went into districts to train teachers. I trained a dozen of them a day. I enthused them to use modern teaching methods. They don't need to refer to or consult modules. I incarnated modules into them. They themselves are modules now."

A sort of institutionalized ambiguity (like a travelling rumor) can be seen as well in PEP-2's cascading training scheme where those trained to be A-Level trainers train B-Level trainees who in turn train teachers at the C-Level. Seminars and workshops (often there is no clear distinction between two) in Pakistan have degraded to such an extent that a person near the top of government called for a seminar to discuss how to stop so many seminars in Islamabad.

Most of the training of module writers from A-Level to C-Level followed a typical workshop/seminar agenda common to Pakistan. No one is paid to be a resource person, but still like to attend workshops because it means a free trip to Islamabad, a respite from routine and tiring work, there is the possibility of visiting relatives, and there are opportunities to rub shoulders with persons in the higher levels of the bureaucracy. These are rewards that motivate many so-called resource persons and there is little reason to believe things were different with PEP-2's training.

The FIU never succeeded in establishing a convinced and committed core to carry the modular approach into the classroom. The majority of the specialist/experts who worked on the project were senior persons because it is a firm bureaucratic principle that when government or heads of departments are asked to nominate persons to attend seminars or workshops, senior persons are always nominated.

Senior specialists/experts responsible for FIU training most often were persons with a long experience of teacher training at the college or university level, subject specialists from the Bureau of Curriculum and Educational Extension Centres in the provinces, and occasionally a group of psychologists from the National Institute of Psychology. With the exception of the last group, all of these persons have very firm roots in the present educational system. They have a strong identification with and stake in this system. The idea of Learning Modules was very new to them. With little solid help from the PIUs, they attempted to conceptualize PEP-2 training in terms of their own ideas fixed on model lessons and lesson planning. One might perhaps expect more from the curriculum specialists, but a very cursory look at the National Curriculum reveals the limited level at which they operate.

Despite many efforts to stay on course, at least during earlier stages of the project, training for the implementation of Learning Modules through the work of Learning Coordinators drifted into the familiar methods of lesson planning as understood and practiced during Primary Teaching Certificate (PTC) training. Lesson plans and model lessons created in the PTC training program are exercises that are planned, prepared, and practiced for one objective only - to demonstrate them for the PTC program examiner. It is *not* training for

teaching, and every PTC-passed and freshly recruited teacher knows or soon learns that the PTC program is irrelevant to teaching practiced in Pakistani schools. Even enthusiastic young teachers will be told by head teachers to ignore what they learned in training.

Many people responsible for B-Level training never received A-Level training. One Project Director reported that a particular subject specialist working in a provincial department was sent to Islamabad to receive A-Level training to become a B-level trainer. When training was organized in his province, his department head would not release him to be a resource person for a ten-day B-Level training program because when this program was started there was too much work for him to do; the real reason was that the department head believed that the Project Director had squeezed him out of the Project Director appointment. Poor training appears to have happened again and again, with resource persons disseminating information about the roles and functions of Learning Coordinators and Learning Modules in terms of whatever meaning these had in their own experience.

The writing of modules by specialists/experts was not different. Writers whose names appear on modules showed complete ignorance about the basic concept, purpose and structure of Learning Modules. They claim that they were never trained. Most module writers were independent of PEP-2 but were government servants nevertheless. One province attempted to recruit permanent module writers, but the idea ran into a snag. By the time permanent module writers could be employed, the project was too far along and the quality of modules written by the permanent writers suffered because they joined too late. Again we see that delay introduced further distortion into the writing of modules.

Learning Module Findings

Because the teacher training was the weakest component of the World Bank financed Pakistan Primary Education Project (1978-83), the idea of developing Learning Modules emerged as a strategy for the Second Primary Education Project (PEP-2) financed by the World Bank (1985-89). This concept was first introduced by Paul Schwarz, an educational consultant and member of the World Bank pre-appraisal team. Their report in August 1984 outlined the scope of a project to develop learning modules as "the linch-pin of various categories of inputs that would be directed at improvement in performance would be a set of teaching/learning modules, and that would be developed exclusively for this purpose." The staff appraisal report listed the following uses for learning modules:

- (1) A basis for in-service training courses to be provided to teachers, assistant teachers, learning coordinators and other supervisory personnel;
- (2) A post-training guide and reminder for teachers when they return to classrooms;
- (3) Learning aids for students;
- (4) A focal point for supervision and on-the-job remedial training;
- (5) Vehicles for further research on the use of standardized learning materials to upgrade student achievement.

The World Bank laid down the condition that the Government of Pakistan should demonstrate its ability to prepare Learning Modules as a pre-condition for PEP-2.

In order to identify expertise for writing a set of 12 prototype Learning Modules, the Primary and Non-formal Education Wings of the Federal Ministry of Education organized a national level three-day workshop at Islamabad on 6 to 8 January 1985. Subject specialists from the Curriculum Bureaus of Sindh and Punjab, the Text Book Board in the NWFP, and educational psychologists from the National Institute of Psychology were invited to this

workshop. Dr. L.R. Davis who was an FIU consultant introduced the concept of Learning Modules in this workshop and conducted an exercise in writing Learning Modules.

As a result of a review of the outcomes of this workshop, the Federal Ministry of Education appointed the National Institute of Psychology (NIP) to prepare 12 prototype Learning Modules which were to be considered by the World Bank during project negotiation, and later arranged for the preparation of a further 60 modules to complete module requirements for the first phase of the project. The 12 prototype modules were sent to Paul Schwarz in April 1985. He wrote a detailed review; though appreciating the effort, he pointed out many shortcomings and provided suggestions for improvement. During this period, NIP also undertook a formative evaluation of four Urdu, four science and four mathematics modules in schools in Abbottabad. The evaluation concluded that in-field assessment of the modules would be possible only after teachers were thoroughly trained in the use of modules in their teaching. However, because no school and its staff could be made available to NIP, teacher training in the use of learning modules could not be undertaken by NIP.

The FIU also appointed NIP, in collaboration with the FIU, to prepare a Master Training Manual and to organize an A-Level Training Workshop for Master Trainers.

A ten day A-Level Training Workshop was held from 5 to 15 October 1985; 48 'Master Trainers' nominated by provinces participated. Because of no proper orientation of the participants, the workshop, rather than focussing on training, ended up as a discussion exercise questioning the rationale underlying the concept and strategy of learning modules in the Pakistani context. Although Master Trainers were expected to be resource persons for B-level training to be conducted at district levels and participated in by supervisory staff of the project, they were, at the end of the workshop, not quite convinced about the concept and utility of Learning Modules. The workshop never reached a point where participants could actually train anyone to use learning modules.

In a meeting of PIU Project Directors held in December 1985, the concept, rationale, and objectives of Learning Modules were again questioned. Directors of PIUs were of the opinion that Learning Modules were modified versions of teachers guides, and it was felt that the 72 modules so far developed were prototypes that the PIUs were to improve and modify before printing. The Project Directors also expressed the wish that provinces should become module writing centers. The FIU, while agreeing to this suggestion, asked the PIUs to constitute a select committee of subject specialists in order to write additional modules. It was decided to print 18 of the 72 Learning Modules prepared by the National Institute of Psychology for B-level training of Learning Coordinators in the provinces.

While this training was taking place, there was criticism from the provinces that the modules were too "psychologically loaded" and did not adequately address educational considerations. There also was a strong pressure to provincialize Learning Module writing and publication. In response to this criticism, FIU allowed provinces to write and publish their own modules, and allocated work as shown in Table 1.

Work proceeded very slowly. After writing was completed for a reasonable number of modules, the FIU organized a Specialists Review Committee to evaluate modules prepared by provinces. This committee met under the chairmanship of Professor Mubarik Hussain Shah from 1 to 10 March 1987. A total of 54 modules were presented to this committee for review. Of these 54 modules, the committee selected 21 modules which covered topics common to all provinces, offered comments on their structure, and gave suggestions for activities, schemes of work, and mastery tests.

The committee decided that none of the modules were appropriate for classroom use. It suggested rewriting of all of these and recommended their testing in classrooms for a 10 per cent sample of schools. The committee also proposed the training and orientation of module writers. In following the recommendations of this committee, the FIU arranged the first writers workshop held on 16 to 25 June 1987. The concept of Learning Modules was again

discussed and elaborated in this workshop, and an agreed structural outline for Learning Modules was prepared. This outline shown in Table 2 contains the most detailed concept of a Learning Module:

Table 1.
Allocation of Work for Development of Learning Modules

Level	Subjects	Classes					Total
		1	2	3	4	5	
National	Urdu	4	4	4			12
	Mathematics					12	12
	Science				3	5	8
	Social Studies					12	12
	<i>Total</i>						44
NWFP	Urdu	4					4
	Mathematics	12			12		24
	Science				3	5	8
	Islamiat					12	12
	<i>Total</i>						48
Sindh	Urdu	4	4	4			12
	Mathematics		12	12			24
	Science				3	5	8
	Islamiat				12		12
	<i>Total</i>						56
Balochistan	Integrated	12	12				24
	Urdu			12	12	12	36
	Social Sciences			12			12
	<i>Total</i>						72
<i>Grand Total</i>						220	

The FIU and World Bank also arranged for the foreign training of PIU staff in module writing at RECSAM, Penang, Malaysia for three months in 1987, followed by a Writers' Workshop; a national committee for writing modules was established and met from 25 to 27 October 1987. Module writing work in the provinces was allocated by the committee. However, production was slow since members of the writing committee were mostly subject specialists working full time in their institutions. Therefore, it was decided to establish a module writers' cell in some provinces. In Balochistan, for instance, a five member cell was sanctioned, but only two persons were employed for this task. As a consequence, most writing was done by subject specialists at Teacher Training Institutes or in Bureaus of Curriculum.

Learning Module Ratings

Seventy-four Learning Modules were evaluated in terms of clarity of objectives, the match of objectives with those of textbooks and the National Curriculum, the quality of explanatory passages and content, the feasibility of teacher activities, features of pupil exercises, the availability of material and aids, format features, and the appropriateness of mastery testing methods.

Table 2.
Intended Components a Learning Module.

1. Introduction

- a. Purpose - explained in a few words.
- b. Contents - refer to curriculum document, listed content, concepts, relevant textbook chapters.
- c. Amplification of content - in terms of implications for procedures, problem-solving in daily life.
- d. Overview of subject - to improve teacher competency.
- e. Methodology - introduction to procedures and activities with clarified time frame.

2. Previous knowledge

- a. Prerequisite conditions of language, life experience, school experiences referred to preceding content, motivation.

3. Objectives

- a. In terms of "can do" objectives.
- b. Limits of performance - which are implicit or not explicit for the child.

4. Module sections

- a. New terms.
- b. Activity-wise objectives (if necessary).
- c. Material (listed) - from teacher's own resources (local or indigenous), from Primary Schools Teaching Kit, from modules themselves (e.g., flash cards).
- d. Activities - all are child-centered and as far as possible are to address child's knowledge, skills, concepts, rule-following procedures, problem-solving in daily life activities for teacher to be carried out in the classroom not necessarily by the teacher but with his active supervision; activities carried out, more independently, by the pupils, but under teacher guidance when necessary activities to monitor the children's performance.

5. Mastery Test

For each of these characteristics, three positively worded statements were given; raters indicated the extent of their agreement with each statement on a four-point rating scale anchored at points labelled "strongly agree, agree, disagree, strongly disagree". Frequencies and percentages of response are shown below for each statement. First, however, the main conclusions from the ratings are listed.

Objectives

Raters found the objectives for 71 per cent of the modules to be clear and understandable.

Textbook and module objectives matched for 45 per cent of the modules rated.

About half of the modules were rated as showing consistency between their objectives and objectives in the National Curriculum; the same proportion were not rated.

Explanatory Passages and Text Content

Explanatory passages and text content for 75 per cent of the modules were rated as clear and comprehensible.

Raters found that objectives were consistent with text content for 72 per cent of the modules.

Explanatory passages and text were rated as accurate and up-to-date for 75 per cent of the modules.

Teacher Activities

About 73 per cent of the modules were rated as showing a consistency between explanatory text and objectives.

Modules were evenly divided between positive and negative ratings for the quality of suggestions for teaching; whether this is due to merit or due to the feasibility of suggestions is uncertain.

Raters found that 35 per cent of the modules indicated the use of materials that are easily available to teachers.

Pupil Exercises

Raters indicated that about 43 per cent of the modules should stimulate pupil participation, but 40 per cent were rated as not doing so; the rest were not rated.

Pupil exercises in nearly 26 per cent of the modules were rated as consistent with objectives and teacher activities.

More than half of the modules (58 per cent) were rated as not giving sufficient time for pupil exercises.

Materials and Aids

Only 12 per cent per cent of the modules were favorably with respect to use of materials in the Primary School Teaching Kit.

Favorable ratings were given to 38 per cent of the modules in terms of use of easily available materials aids.

Nearly four-fifths of the modules (79 per cent) were rated as showing consistency between teaching activities and objectives.

Format

A large majority of modules (83 per cent) were rated as having a well-organized and easy-to-follow format.

A large proportion of the modules (87 per cent) were rated as free from mistakes and printing errors.

The format of 39 per cent of the modules was rated as a help in lesson planning.

Mastery Testing (student assessment procedures)

Only 22 per cent of the modules were rated as showing consistency between module objectives and student assessment procedures.

Slightly over half of the modules (55 per cent) were rated as having student assessment procedures at appropriate difficulty levels.

Modules were evenly divided in terms ratings on how well student assessment procedures help to identify students who do well or poorly in school.

Time Demands

Favorable ratings were given to 59 per cent of the modules in terms of the time constraints in the typical school.

Table 3.
Results of Evaluation of Learning Modules.

Characteristics of Modules	Ratings	Results of Evaluation	
		N	%
A. Objectives stated in this Learning Modules			
<i>1. Are clearly stated and understandable:</i>			
	Strongly Agree	12	15.8
	Agree	42	55.3
	Disagree	6	7.9
	Strongly Disagree	2	2.6
	Not possible to rate	2	2.6
<i>2. Match the objectives as presented in textbooks:</i>			
	Strongly Agree	12	15.8
	Agree	22	29.3
	Strongly Disagree	36	48
	Not possible to rate	12	16
<i>3. Match the objectives in the National Curriculum:</i>			
	Strongly Agree	13	17.1
	Agree	23	30.3
	Disagree	2	2.6
	Strongly Disagree	1	1.3
	Not possible to rate	37	48.7
B. Explanatory passage and the text content in the module is:			
<i>1. Written in direct and simply understood language:</i>			
	Strongly Agree	7	9.2
	Agree	50	65.8
	Disagree	18	23.7
	Strongly Disagree	1	1.3
<i>2. Consistent with stated objectives:</i>			
	Strongly Agree	6	7.9
	Agree	49	64.5
	Disagree	17	22.4
	Strongly Disagree	3	3.9
	Not possible to rate	1	1.3

Table 3. — continued
Results of Evaluation of Learning Modules.

Characteristics of Modules	Ratings	Results of Evaluation	
		N	%
<i>3. Accurate and uptodate:</i>			
	Strongly Agree	6	7.9
	Agree	51	67.1
	Disagree	13	17.1
	Strongly Disagree	3	3.9
	Not possible to rate	3	3.95
C. Teacher activities developed in the module:			
<i>1. Are consistent with objectives and explanatory text:</i>			
	Strongly Agree	8	10.5
	Agree	40	52.6
	Disagree	21	27.6
	Strongly Disagree	5	6.6
	Not possible to rate	2	2.6
<i>2. Are good suggestions that can be carried out by most teachers:</i>			
	Strongly Agree	7	9.21
	Agree	32	42.1
	Disagree	25	32.9
	Strongly Disagree	11	14.5
	Not possible to rate	1	1.32
<i>3. Use resources and materials that are easily available:</i>			
	Strongly Agree	10	13.2
	Agree	17	22.4
	Disagree	28	36.8
	Strongly Disagree	20	26.3
	Not possible to rate	1	1.32
D. Pupil exercises developed in the module:			
<i>1. Should stimulate active pupil participation:</i>			
	Strongly Agree	6	7.9
	Agree	27	35.5
	Disagree	22	28.9
	Strongly Disagree	9	11.8
	Not possible to rate	12	15.8
<i>2. Give pupils sufficient practice time:</i>			
	Strongly Agree	4	5.26
	Agree	16	21.1
	Disagree	33	43.4
	Strongly Disagree	9	11.8
	Not possible to rate	14	18.4
<i>3. Are consistent with objectives and teacher activities:</i>			
	Strongly Agree	5	6.6
	Agree	39	51.3
	Disagree	13	17.1
	Strongly Disagree	3	3.9
	Not possible to rate	16	21.1

Table 3. — continued
Results of Evaluation of Learning Modules.

Characteristics of Modules	Ratings	Results of Evaluation	
		N	%
E. Material and aids described in the module:			
1. <i>Clearly refer to the Primary School Teaching Kit:</i>			
	Strongly Agree	1	1.3
	Agree	9	11.8
	Disagrees	17	22.4
	Strongly Disagrees	46	60.5
	Not possible to rate	3	3.9
2. <i>Can be easily obtained by the teacher:</i>			
	Strongly Agree	6	7.9
	Agree	23	30.3
	Disagrees	24	31.6
	Strongly Disagrees	21	27.6
	Not possible to rate	2	2.6
3. <i>Are consistent with objectives and teacher activities:</i>			
	Strongly Agree	14	18.4
	Agree	46	60.5
	Disagrees	8	10.5
	Strongly Disagrees	3	3.9
	Not possible to rate	5	6.6
F. The Format of this module:			
1. <i>Is well organized and easy to follow:</i>			
	Strongly Agree	35	46.1
	Agree	28	36.6
	Disagrees	7	9.2
	Strongly Disagrees	1	1.32
	Not possible to rate	6	7.9
2. <i>Is free from mistakes and printing errors:</i>			
	Strongly Agree	15	19.7
	Agree	51	67.1
	Disagrees	8	10.5
	Strongly Disagrees	1	1.3
	Not possible to rate	1	1.3
3. <i>Enables teachers to easily develop lesson plans and schemes:</i>			
	Agree	27	35.5
	Disagrees	40	52.6
	Strongly Disagrees	5	6.6
	Not possible to rate	1	1.3
G. Mastery Test (pupil's assessment) procedures:			
1. <i>Are very closely related to intended objectives:</i>			
	Strongly Agree	5	6.6
	Agree	12	15.8
	Disagrees	42	55.3
	Strongly Disagrees	6	7.9
	Not possible to rate	2	2.6

Table 3. — continued
Results of Evaluation of Learning Modules.

Characteristics of Modules	Ratings	Results of Evaluation	
		N	%
<i>2. Are of appropriate difficulty:</i>			
	Strongly Agree	5	6.6
	Agree	37	48.7
	Disagrees	22	28.9
	Strongly Disagrees	11	14.5
	Not possible to rate	1	1.3
<i>3. Help to identify pupils who are doing well or doing poorly:</i>			
	Strongly Agree	5	6.6
	Agree	31	40.8
	Disagrees	27	35.5
	Strongly Disagrees	12	15.8
	Not possible to rate	1	1.32
<i>H. Can the module be done within the time constrains of a typical primary school:</i>			
	Yes	45	59.2
	No	13	17.1
	Not possible to rate	18	23.7

Classroom Observation Findings

A four-point forced-choice rating scale was developed for classroom observation of various teaching activities. Although this rating scale was developed to monitor use of Learning Modules in classrooms, it also reflected general aspects of teaching. These activities included how well the teacher clarifies objectives, engages the students' prior related learning, demonstrates the concept being taught, prompts pupil participation, provides for independent pupil work, uses reinforcement, asks questions, monitors pupil understanding, creates situations where pupils are actively participating in the lesson, summarizes lessons, and uses methods to assess what pupils have learned.

Observers rated teaching activities by marking 1, 2, 3, or 4 on a rating scale that ranged from '1' = least favorable to '4' = most favorable. During the tryout of this instrument, it became clear that many statements were irrelevant in the context of teaching in Pakistan, so another category was added to indicate that activity when the statement was "not applicable to what was happening in the classroom." This was checked by observers in over 50 per cent of the observed classrooms for four activities, between 40 and 50 per cent of the classrooms for three activities, and between 22 and 33 per cent of the classes for four activities. This high "not applicable" rate obviously means that there is little opportunity to observe good teaching in many classrooms. Observation ratings are first summarized below, followed by the frequencies and percentages for separate activities.

Teacher clarifies what pupils are to learn

Observers rated 16 per cent of classrooms favorable in this respect, and 37 per cent of classrooms received unfavorable ratings; 44 per cent of the classrooms received a "not applicable" rating.

Teacher engages pupils' prior related learning

Seven per cent of classrooms received favorable ratings, 34 per cent unfavorable ratings, and 59 per cent of the ratings were "not applicable."

Teacher demonstrates activities related to concepts

Twelve per cent of classrooms received favorable ratings, 34 per cent unfavorable ratings, and 53 per cent of the ratings were "not applicable."

Teacher invites participation in teacher's activity

Twenty-three per cent of classrooms received favorable ratings, 36 per cent unfavorable ratings, and 41 per cent of the ratings were "not applicable."

Teacher allows students to do independent work

Only 9 per cent of the classrooms were favorably rated, with 37 per cent rated unfavorably and 54 per cent rated as "not applicable."

Teacher uses reinforcement

The intention is positive reinforcement. Reinforcement was favorably rated in 25 per cent of the classrooms, rated unfavorably in 50 per cent, and rated "not applicable" in one-fourth of the classrooms.

Teacher uses questions to encourage participation

Questioning was favorably rated in 32 per cent of the observed classrooms, rated unfavorably in 46 per cent, and rated "not applicable" in 21 per cent.

Teacher asks questions to monitor pupil understanding

Thirty-five per cent of the classrooms were favorably rated, 32 per cent were rated unfavorably, and 32 per cent were rated "not applicable."

Teacher creates active pupil participation

This activity was favorably rated in 25 per cent of the classrooms, was unfavorably rated in 48 per cent of the classrooms, and was rated "not applicable" in 27 per cent.

Teacher summarizes lesson objectives/activities/exercises

Only seven per cent of the classrooms were favorably rated, 37 per cent were rated unfavorably, and 55 per cent were rated "not applicable."

Teacher uses a method to assess pupil learning

Sixteen per cent of the classrooms received a favorable rating, 36 per cent received an unfavorable rating, and 48 per cent received a "not applicable" rating.

Table 4 shows the ratings on classroom observations.

Table 4.
Ratings of Classroom Observations

Categories of Teaching Activities	Ratings	
	N	%
<i>Objectives: The teacher makes it clear to pupils what they are to learn</i>		
4: Most Favorable	2	3.6
3: Favorable	7	12.5
2: Unfavorable	10	17.4
1: Least Favorable	11	19.6
Not applicable to what was happening in the classroom	26	44.4
<i>Review: The teacher warms up pupils by reminding them of previous related learning</i>		
4: Most Favorable	1	1.8
3: Favorable	3	5.4
2: Unfavorable	8	14.3
1: Least Favorable	11	19.5
Not applicable to what was happening in the classroom	33	58.9
<i>Concept related activity: The teacher demonstrates an activity and explains how it is related to a concept being taught by the teacher and to be learned by pupils</i>		
4: Most Favorable	3	5.4
3: Favorable	4	7.1
2: Unfavorable	18	14.3
1: Least Favorable	11	5.4
Not applicable to what was happening in the classroom	30	53.0
<i>Participation: The teacher invites pupils to participate in the activity being done by the teacher (or a similar activity)</i>		
4: Most Favorable	4	7.1
3: Favorable	9	16.1
2: Unfavorable	6	10.7
1: Least Favorable	14	25.0
Not applicable to what was happening in the classroom	23	41.1
<i>Independent activity: The teacher provides an opportunity to pupils to independently work in a similar activity</i>		
4: Most Favorable	2	3.6
3: Favorable	3	5.4
2: Unfavorable	9	16.1
1: Least Favorable	12	21.4
Not applicable to what was happening in the classroom	30	53.6
<i>Reinforcement: The teacher encourages desired behavior with reinforcement</i>		
4: Most Favorable	3	5.4
3: Favorable	4	7.1
2: Unfavorable	8	14.3
1: Least Favorable	11	19.6
Not applicable to what was happening in the classroom	30	53.0

Table 4. — continued
Ratings of Classroom Observations

Categories of Teaching Activities	Ratings	
	N	%
<i>Questioning: The teacher asks questions from the pupils to encourage their participation</i>		
4: Most Favorable	9	16.1
3: Favorable	9	16.1
2: Unfavorable	14	25.0
1: Least Favorable	12	21.4
Not applicable to what was happening in the classroom	12	21.4
<i>Monitoring: The teacher asks questions to monitor pupils' understanding of what is being taught</i>		
4: Most Favorable	5	8.9
3: Favorable	15	26.8
2: Unfavorable	7	12.5
1: Least Favorable	11	19.6
Not applicable to what was happening in the classroom	18	32.1
<i>Active participation: Pupils are actively participating in the learning process</i>		
4: Most Favorable	5	8.9
3: Favorable	9	16.1
2: Unfavorable	16	28.6
1: Least Favorable	11	19.6
Not applicable to what was happening in the classroom	15	26.8
<i>Summary: The teacher briefly reviews the lesson; objectives, related activities, and exercises</i>		
4: Most Favorable	2	3.6
3: Favorable	2	3.6
2: Unfavorable	9	16.1
1: Least Favorable	12	21.4
Not applicable to what was happening in the classroom	31	48.2
<i>Mastery testing: The teacher uses a method to determine which pupils have successfully learned what the lesson intended</i>		
4: Most Favorable	4	7.1
3: Favorable	5	8.9
2: Unfavorable	9	16.1
1: Least Favorable	11	19.6
Not applicable to what was happening in the classroom	15	26.8

Planning visits to schools had alerted the evaluators to the likelihood that perhaps a very small number of teachers may be using learning modules in their classes. Therefore, a provision was made to record classroom observations in those cases where most of the categories in the Classroom Observation rating scale appeared to be irrelevant. Eleven categories were used to describe classroom processes. Frequencies and percentages for these eleven activity categories are presented, following this brief summary below.

Summary: The percentages of observed classrooms with respect to these categories are:

- (a) No teacher in observed classrooms used a PEP-2 Learning Module;
- (b) Nothing was happening or there was no teaching in 21 per cent of the classrooms;
- (c) The teacher was teaching more than one class in 14 per cent of the classrooms;
- (d) Teachers reading from a textbook occurred in 53 per cent of the classrooms;
- (e) Some kinds of AV materials were used in seven per cent of the classes;
- (f) Four percent schools in the sample were not functioning at the time of their observation.

Table 5 shows the amount of different teaching categories observed in classrooms.

Table 5.
Categories of Teaching Processes and their Frequencies in Classrooms.

Teaching Process	N	%
No teaching is taking place.	3	5.4
Teacher is present but no teaching activity.	5	8.9
Pupil engaged in some teacher-directed activity but teacher is doing nothing.	2	3.6
Teacher is reading from text book.	2	3.6
Teacher is reading from text book; pupils repeat while looking at books.	7	12.5
Teacher is reading from textbooks and verbally explaining what is read.	10	17.4
Teacher is reading from textbooks and writing some relevant words on chalkboard.	11	19.6
Using some AV aids but not those for any specific Learning Module.	4	7.1
Teaching with a specific Learning Module.	0	0.0
Teaching more than one class.	8	14.3
The school: is closed therefore nothing happening.	4	7.1

Teacher Interview Findings

Classroom observation was followed by an interview with the same teacher whose class was observed. The first part of this interview related to general information about the teacher and was recorded in a structured format. The following can be considered a typical profile of primary school teachers in Pakistan.

Of the 51 teachers interviewed, only two were less than matriculate and a large majority (88 per cent) were matriculates. Only one was FA and five were graduates. One was untrained. Of the trained teachers a very large proportion (93 per cent) were PTC trained. Of those trained in the non-formal teacher training program, only one teacher had benefitted from Allama Iqbal Open University's primary school teachers' training program and two had completed the recently started teachers 'crash' training program in Balochistan. A large majority (93 per cent), were in Grade 7. A large proportion (85 per cent), were under 25 years of age. Since teachers were young, 85 per cent had less than five years teaching experience.

About 82 per cent of the teachers were 'local', which essentially means that they can communicate in the same language spoken by children in their classes. There was no concept of a teacher having a particular competency in any specific primary school subject. The most common situation (91 per cent) was that of a teacher remaining with the same group of pupils when the class was promoted to the next grade.

A very large majority, 92 per cent, had gone through at least one cycle of Learning Modules training, so some training did take place. Most of the teachers mentioned having attended refresher courses, but they had little to offer in the way of what was gained or what was remembered from those courses.

The second part of the teacher interview was related to teaching practices. This part was semi-structured and responses were recorded by interviewers. Listed questions were asked in sequence; frequencies of replies are indicated. The most startling finding of this project is that not a single teacher used any specific module for teaching in the observed classrooms. However, the teachers were still asked their opinions of the learning modules since these may have been formed through training by the Learning Coordinators. Details are given immediately following this summary.

Summary of Teacher Interviews.

Thirty-three out of 51 teachers (64 per cent) used no material at all in their teaching; twenty teachers (39 per cent) used textbooks and of these only eight used a chalkboard along with textbooks. Only two teachers used material from the Primary School Teaching Kit and only one teacher used local material.

When asked if they ever used Learning Modules, 72 per cent stated they did not; 18 per cent claimed occasional use.

Thirty-eight teachers (74 per cent) were of the opinion that Learning Modules do not help in textbook teaching.

Forty-seven (92 per cent) believed that Learning Modules do not help to prepare pupils for final examinations.

Thirty-seven teachers (72 per cent) believed that the modular approach is not better than the "old" teaching approach, and the same number do not think that Learning Modules would contribute to greater pupil participation.

Forty-three teachers (84 per cent) had no opinion on whether Learning Modules made teaching and learning better or worse, but the same number felt that the Learning Module approach was not worth continuing.

Twenty-four teachers (24 per cent) stated they had received no training.

When asked why Learning Modules are not being used, 87 per cent of the teachers stated that there was not enough time, 50 per cent said there were not enough teachers, and 46 per cent said no one asked them to use them.

Table 7.
Response Categories of Teachers' Interviews

Response Categories	N(1)	%
Did you used a specific Learning Module in the observed lesson?		
No	51	100.0
Do you ever use Learning Modules in teaching?		
Yes	10	18.0
No	44	72.0
What material (such as textbooks or workbooks or audio-visual aids) do you use?		
None	33	61.0
Textbooks	20	37.0
Teaching kit material	2	4.0
Chalkboard	8	15.0
Indigenous material	1	2.0
Do you believe that Learning Modules help in textbook teaching?		
Yes	15	28.0
No	38	70.0
Do you believe that Learning Modules help prepare pupils for final examinations?		
Yes	8	15.0
No	47	87.0
In there enough time to use Learning Modules as well as text books for teaching?		
Yes	6	11.0
No	47	87.0
Do pupils enjoy the Learning Modules approach better than the old teaching approach?		
Yes	17	31.0
No	37	69.0
Do Learning Module lead to more pupil participation in learning activities?		
Yes	16	30.0
No	37	69.0

(1) Even in the categorical responses of "yes" or "no", some teachers' tendency to remain uncommitted has resulted into N being more than the total number of teachers interviewed.

Table 7. — continued.
Response Categories of Teachers' Interviews

Response Categories	N	%
<i>Have Learning Modules made teaching and learning in the classroom better or worse?</i>		
Better	9	16.0
Worse	2	4.0
No opinion	43	80.0
<i>Do you believe that Learning Module approach is worth continuing?</i>		
Yes	11	20.0
No	43	80.0
<i>Were you trained to use Learning Modules for teaching?</i>		
Yes	30	56.0
No	24	44.0
<i>Were you helped by the Learning Coordinators?</i>		
Yes	6	11.0
No	44	81.0
<i>Were other kinds of training received?</i>		
Yes	4	7.0
No	48	89.0
<i>Should training be frequently given?</i>		
Yes	3	24.0
No	39	72.0
<i>What topics are most important to cover in training?</i>		
Topics unrelated to modules	41	76.0
Subjects related to modules	11	20.0
All subjects	7	13.0
Science	6	11.0
Math	5	9.0
English	4	7.0
Urdu	2	4.0
<i>What resources and aids are needed to use Learning Modules in classrooms?</i>		
Audio-Visual Aids	11	20.0
All Aids	4	7.0
Teaching kit	5	9.0
Funds	1	2.0
Rooms	1	2.0
None	34	63.0
<i>If Learning Modules are not used what are the reasons?</i>		
Not enough time	47	87.0
Not enough teachers	27	50.0
Nobody asks to use them	25	46.0
Only recently received	1	2.0
No reason given	21	39.0

School Visit Findings

Three districts in the NWFP and two in Balochistan were selected for the evaluation, and 11 schools were selected from each district. Four of the 55 schools were closed when visited, so observations pertain to 51 schools. School site information is first summarized for certain teacher and school characteristics, then a special set of questions pertaining to pupil assessment method were asked.

For the 51 schools, 15.7 per cent are single teacher schools and approximately 40 per cent have either two or three teachers.

The large majority of teachers are matriculate (82.9 per cent), and the rest are Intermediate or Graduates.

PTC is now the minimum professional qualification for primary teachers. Sixteen percent of the teachers in this sample were professionally unqualified. However, 47% have regular PTC qualifications and another 12% have obtained PTC through non-formal systems. Sixteen percent of the primary school teachers have professional qualification higher than PTC, that is CT and B.ED.

All government servants in Pakistan are under a single salary structure which has National Pay Scales (NPS) that range from Scale 1 to Scale 22. However, a large majority of primary school teachers, 57%, are in NPS 7. Another 20% are in NPS 9. Twenty-seven percent are in NPS 10 and only 8% are in 11 which is the highest scale which a primary school teacher can obtain.

Slightly under half of the teachers are 25 years old or less and 30 per cent are from 26 to 30 years old. Seven per cent of the teachers are over 45 years in age.

A non-local teacher often can not fluently converse with young children, which can be a problem in teaching. About one in six of the teachers were non-local.

Since the primary teachers are young on the average, they will as a group have low average years of experience. The majority (58 per cent) have less than five years experience but there are 14 per cent with more than 10 years of teaching experience.

There are basically two kinds of specializations in primary school. Teachers either can teach particular subjects or they can teach particular classes. Four patterns were found in this sample. The most frequent for 39 per cent of the schools is where the teacher moves from grade to grade with a particular class. About a third of the schools have no particular specialization.

PEP-2 stipulated that all the teachers in project districts will be trained for more than one cycle in the use of Learning Modules. However, there were 23 per cent of the teachers who were never trained, or three-quarters who were.

Crowded classrooms are mentioned as a major problem in the primary schools of Pakistan. Data for this sample show that the most common sizes of the various classes averaged from 15 to 30. One must be careful in interpreting this because variation in class size can be considerable. One classroom for each class seems a reasonable requirement for any school!. About 96 per cent of the schools have less than five rooms and 16 percent have just a single room. The most common school (27 per cent) consists of only two rooms.

Nineteen per cent of the schools do not have drinking water and 82 per cent do not have latrines.

All the schools are supposed to have all of the Learning Modules. Most do, although this was not always checked physically.

All schools are expected to have three important sets of educational material. The Primary School Teaching Kit is available in nearly 70 per cent of the schools, Teachers' Guide Books in about 20 per cent, but only 6 per cent have a copy of the National Curriculum.

Because school examinations are so important to so many persons, a special set of interview questions was developed in order to learn practices that schools follow to examine their pupils. This has relevance for future school improvement efforts in that it is well known that teachers, when motivated by the desire to have their pupils succeed, will teach the content and skills that are assessed.

Without sound individual pupil assessment procedures, there is little accountability, and if so, then any effort in curriculum improvement will have little expected success. Materials that are developed as supplemental to textbooks should include sound assessment procedures that carry weight with supervisors. Sound assessment procedures are those tightly linked to objectives, concepts, skills, knowledge demands, exercises, and activities. In this way, pupil testing serves to drive the implementation of new teaching behaviors that use curriculum materials other than textbooks. A sound educational strategy would use assessment to improve teaching so that it is based on activities that represent more than simply reading from a textbook. A summary of assessment practices obtained through the teacher interviews is briefly summarized, and is followed by the frequencies and percentages of response.

Summary: The assessment of pupil learning in the primary schools is a mixture of unstandardized methods using oral and written procedures. A third of the teachers interviewed indicated they used no testing method. Classroom teachers mark examinations and either record these marks in log books or elsewhere. Results are reported to parents by the pupils themselves; ASDEOs learn of examination results from log books or from copies of records; there is no periodic testing in half of the schools visited. In schools with periodic testing, most do so quarterly. There are virtually no answer papers or solved answer papers available for inspection. Passing marks vary from school to school, but 33 per cent appears to be the most frequently applied standard. Marks are used mainly to pass or fail students.

Table 8 shows the results about inquiry about pupils' assessment in schools.

Table 8.
Pupils Assessment in Schools

Response Categories	N (1)	%
<i>How is pupil achievement examined?</i>		
Oral till Class 2	6	11.0
Oral till Class 3	10	19.0
Oral and written till Class 3	8	15.0
Oral and written till Class 4	9	17.0
Written for Class 4 and 5	4	7.0
Written by the DEO for Class 5	1	2.0
None	8	33.0

(1) As figures for this Table were derived from semi-structured group interviews of teachers, the N and % do not match for each question.

Table 8. — continued
Pupils Assessment in Schools

Response Categories	N	%
<i>How are papers marked and by whom?</i>		
By class teachers till Class 4	36	66.0
By DEO office for Class 5	2	4.0
Other teacher	1	2.0
None	16	3.0
<i>How examination results are recorded (pass/fail, total marks, subject marks)?</i>		
Log book	20	37.0
Recorded as pass or fail	2	4.0
With detailed marks in each subject	8	15.0
None	5	46.0
<i>How are results conveyed to parents?</i>		
By students	40	74.0
None	17	31.0
<i>How are results conveyed to supervisors?</i>		
Log book	13	24.0
Copies results	7	50.0
None	16	30.0
<i>Are copies of question papers and solved papers available?</i>		
Some	1	2.0
None	53	98.0
<i>Is there formal periodic testing?</i>		
Monthly	2	4.0
Quarterly	18	33.0
Periodically done by ASDEOs	8	15.0
None	27	50.0
<i>What is the passing mark?</i>		
No system	1	2.0
33 per cent	30	55.0
40 per cent	1	2.0
45 per cent	1	2.0
50 per cent	1	2.0
55 per cent	1	2.0
None	19	35.0
<i>Use of examination results?</i>		
To pass or fail pupils	37	69.0
To assess child's ability	1	2.0
To save in a log book	1	2.0
None	17	31.0

Learning Coordinators Focus Group Findings

Focus Group Moderators started with very basic questions such as, "Who are Learning Coordinators?", which gave an impression that they knew nothing about PEP-2 and its implementation. Because of this, most Learning Coordinators in the focus groups responded in a positive way which signified "sub acha hai" (all is well). However, when later questions indicated that the Focus Group Moderators were not so naive, Learning Coordinators would temper their responses.

When moderators disclosed that they knew that Learning Modules were not being used in schools, the Learning Coordinators would totally shift their manner and from then on give absolutely proper pictures of their work, and attribute any possible blame to factors outside themselves. By and large, Learning Coordinators were intelligent, generally motivated, clever, very talkative and well informed. They handled the Focus Group sessions very well.

In PEP-2, Learning Modules were the most significant educational innovation for improving the quality of primary education. The Learning Coordinator was the most significant agent for diffusing Learning Modules. Learning Coordinators were prepared for this role through what was called B-level training. An obvious avenue to explore was the Learning Coordinators' conception of their job. The expectation was that they would regard themselves as change agents whose main role was to train and provide assistance to teachers through guidance in the use of Learning Modules.

This expectation was not confirmed in the focus group discussions. Most Learning Coordinators saw themselves as helpers of teachers in very non-specific ways. Their conception of this help was that of guiding teachers towards better teaching. However, their concept of better teaching was again too general and too unspecific. Many of them placed emphasis on the word "coordinator" as meaning "coordinator between pupils and teachers, teachers and departments of education, schools and community" and so on. Few could furnish specific examples of actual coordinating activities. Coordination of the learning process was too much of an abstraction for them.

Many saw themselves as traditional supervisors who inspected schools, keeping an eye on teacher attendance and sometimes supervising the construction of school buildings. Their ideas of educational practice appeared to have come from the traditional ones that characterize the teacher training in Pakistan. This tradition expects trainees to prepare model lessons that are delivered only on a very special occasion, which is the day for their final evaluation for the certificate. Model lessons are not expected to become part of regular teaching. The only idea which Learning Coordinators appeared to have derived from their limited exposure to Learning Modules was the use of audio-visual teaching materials. Their idea of better teaching, which they repeatedly claimed they facilitated, was to help teachers adopt AV material. Learning Coordinators were selected from among primary school teachers. PEP-2 planners considered the role of Learning Coordinator to be a significant innovation because they were creating a new cadre of supervisors drawn from the teaching force. It was believed that the Learning Coordinators would be able to do a better job than regular inspectors who were "outsiders."

This concept, which appeared good on the surface, had its own hazards related to the way Learning Coordinators were selected. In the time-honored tradition of Pakistan's bureaucratic system, the seniority of a teacher was considered the most important criterion for selection in one province and fairly important in the other. The job, advertised in the newspaper, stipulated a minimum level of seniority for application. Selection was mainly determined by interviews, but in some instances Learning Coordinators claimed that they were also given a selection test.

Selection was made at the district level. Technically it was done by PIUs, but since prospective selectees were under the DEOs, the DEOs naturally played a significant role in

selection. Despite claims to the contrary, hidden influences on the selection process cannot be ruled out.

Since the job required work in the field, few female teachers were willing to apply. Several female Learning Coordinators indicated that they were motivated by DEOs to take the job and even in some cases were nominated by DEOs.

In the NWFP, a minimum of five years teaching, matriculation, and PTC were the basic qualifications for application. In one district in Balochistan, 40 of the most senior teachers at Grade 10 were invited to appear for a test and an interview for selection as Learning Coordinators. Ten were selected from this candidate group. Selection of Learning Coordinators was expected to be followed by a fairly well thought out plan of B-Level training. The most significant aspect of this training was learning to train primary school teachers to use Learning Modules and to implement continuous on-site training and monitoring of teachers.

One large cycle of B-Level training took place in 1986 in Abbottabad. Although most Learning Coordinators recall this training, they do not remember being exposed to the concept of Learning Modules as a dominant theme. They tend instead to remember "modern and better ways of teaching." This is meant as involving pupils in the learning process, using audio-visual aids, and making education more activity based. They repeatedly refer to the methodology emphasized during training as creating "model lessons and lesson plans," which are very familiar words in the regular teacher training system of Pakistan.

Only a few Learning Coordinators recalled that Learning Modules were distributed in those training sessions, and for them the apparent purpose of those Learning Modules was to suggest hints for planning model lessons. The Learning Coordinators' recollection of the 1986 training at Abbottabad reveals the often fruitless result of teacher training workshops.

All the participants in 1986 Abbottabad initiative were not Learning Coordinators at that time, possibly because things were in the middle of the selection process. Some participants who became Learning Coordinators claimed that this happened because of their good performance in that workshop.

Besides the ceremonious presence of distinguished FIU and PIU staff in the 1986 Abbottabad training sessions, Learning Coordinators recalled subject specialists from various organizations who taught them "better teaching methods." They also remember lots of effort and hard work, but very few were able to relate details of this workshop experience with regard to the Learning Module concept.

Many Learning Coordinators joined the program after the time of Abbottabad training. The second training phase for the initially selected Learning Coordinators and first training phase for later selected Learning Coordinators took place at the provincial levels and often in district headquarters.

Learning Coordinators were presumably trained so that they could train teachers at Level C. However, Level C training was not left solely to Learning Coordinators. Teacher training was organized at district or sub-district levels and invariably someone from the PIUs or subject specialists contributed to C-level training. Training generally lasted for 10 to 15 days and, according to the Learning Coordinators, teachers were trained to use "modern methods of teaching" — i.e., to prepare lesson plans, to use audio-visual aids, and to introduce a practical basis in their teaching. Very few Learning Coordinators mentioned the word Learning Modules but when they did, they never referred to the intended functions of Learning Modules.

A significant aspect of the Learning Coordinators' job is school visiting; they are expected to visit each of their assigned schools at least once a month. However, they were not very clear about their specific role in improving the quality of teaching through the Learning Modules

approach. Their misconceptions of the Learning Module strategy is what they are implementing in schools, and they believe this is how they improve teaching quality. They mentioned repeated instances where they clarified ideas for teachers and explained tricky concepts to pupils, and taught teaching strategies (without being very specific about these) that teachers could adopt in certain situations.

They believe that they have checked teacher absenteeism, and one often-mentioned role is their teaching the classes of an absent or on-leave teacher. They also believe that their job is keep an eye on the school and to encourage teachers to practice "demonstration teaching" using audio-visual aids.

Many Learning Coordinators were proud of their jobs supervising other teachers, even some head teachers under whom they had previously served. Their relationships with DEO's varied, ranging from excellent cooperation to a intense hostility. Every Learning Coordinator, with PEP-2 closing down, mentioned their possible job insecurity.

Since the Learning Coordinators' conception of Learning Modules was what they acquired from training, they never understood that Learning Modules distributed to them and the teachers had a truly serious and definite purpose. Although they have a fairly clear idea about the basic structure of Learning Modules, they seldom understood their utility for classroom teaching and teacher guidance. Learning Modules for them were simply another teacher's guide book that gathers dust when distributed to schools. They were unaware of the modules central role in the PEP-2 scheme.

After much pressing, few Learning Coordinators were able to indicate real familiarity with any specific Learning Module. They had very general notions about what is contained in modules, which was distilled from their ideas about "better ways of teaching." In very general terms they praised the quality of Learning Modules, except some Learning Coordinators thought that the quality of Urdu and Isalmiat modules was poorer than that for science and mathematics.

Learning Coordinators were responsible for transporting modules to schools. All the Learning Coordinators definitely stated that they received Learning Modules and that these were distributed to their schools. Their responses became vague when asked when the modules were distributed and how many modules were delivered. No one had an inkling of an exact number. Some Learning Coordinators said that Learning Modules are just now (early 1993) being distributed. Some complained of the difficulty of carrying modules on their motor bikes to a large number of schools.

Learning Coordinators never indicated that teachers are supposed to formally use modules in their classroom teaching. Under the actual conditions mentioned, Learning Coordinators could not possibly know whether teachers understood the content or functions of modules, although a majority expressed their opinion that teachers would have difficulty in understanding the use of modules.

Learning Coordinators were quick to indicate their connection with the Learning Module approach to primary school teaching, and spoke very highly of whatever this approach might have meant to them. However, they indicated many obstacles to the proper implementation of modules. They mentioned most often that schools had less than the minimum number of required teachers. They also generally complained about too many subjects being taught and the continual shifting of government policy regarding textbooks and curriculum. In Balochistan, there was lot of disagreement with the short-lived policy to introduce regional languages in primary schools, which had for some time absorbed all of the training resources of the province.

The Learning Coordinators, though not very clear about the Learning Modules concept, were very clear about difficulties in introducing any innovation in primary education. They considered the present examination system as a major stumbling block, where student

performance is assessed by SDEOs on the basis of the results of poor test procedures. Despite mentioning all of the many difficulties in implementing Learning Modules, they strongly defended the modular approach as defensible and feasible.

Some of the Learning Coordinator groups kept face to the end by asserting that the Learning Module approach is very successful; other groups indicated problems with implementation. Mentioned difficulties correspond to the many problems of primary schools and education in Pakistan. Learning Coordinators correctly pointed out that the success level of this effort should be judged against the nearly hopeless situation of primary education in Pakistan. They believed that because the modular approach has been only recently introduced, it is too soon to expect any substantial change in teaching and learning.

Teacher Focus Group Findings

Teacher focus group sessions aimed to discover teacher perceptions of the Learning Modules and how Learning Coordinators influenced their teaching. The total number of teachers who participated in 15 focus groups were 96.

The final step in the implementation of modules was teacher training in their use. Training programs were organized both in NWFP and Balochistan, and took place at both the district and sub-district levels. Training was planned on the average for ten days, somewhat longer in the NWFP and shorter in Balochistan. Many teachers went through more than one cycle of training which was mainly carried out by Learning Coordinators. Other persons who assisted the Learning Coordinators were subject specialists, who had the most attachment to what they had been doing throughout their careers — training teachers in conventional methods. It is uncertain how much training in the modular approach was received by the subject specialists. But one can assume that because their involvement with PEP-2 was on a very short term basis followed by a return to their institutions, they had undergone no great change in their educational ideology. Teacher training to use modules had to be weakened because of this. The dominant concept that teachers acquired was that training is about “better teaching,” but they were unable to distinguish the training they received from their earlier conventional training. They believed that training was done to reinforce PTC training.

In PTC training, what one is required to do is in fact never done in real schools. Therefore teachers considered C-Level training to be about the use of audio-visual materials, developing activities for demonstration, involving pupils, and so on.

All of these are associated with Learning Modules. But the modules themselves are well thought out, highly structured, and integrated packages. The teachers never understood this; they believed instead they were once more being told about the traditional model lessons.

Teachers indicated that they were trained to teach all subjects in a practical way and to explain concepts to students through reading. Many emphasized that there was nothing new in their C-Level training. Teachers mentioned the term Learning Modules, but none showed a grasp of PEP-2's design for their structure and use.

Some training in the NWFP was superior to that in Balochistan. In the NWFP, nearly all focus group teachers received training; in Balochistan, for example, only two teachers out of seven in one focus group had received training. Given the disorganized ways new teachers are recruited, it is impossible to precisely track who was trained and who was not.

Teachers in the NWFP were much more positive about the quality of their training than were those in Balochistan. The term Learning Coordinator was more of an uncomplimentary term in Balochistan than in the NWFP. Many teachers believed that training in the use of Learning Modules was the same as PTC training. Many teachers also thought that Learning Coordinators had received *only* ten days of training just as they did, and that they

themselves would do a better job than the Learning Coordinators. For many Balochistan teachers, training took place rather recently.

The most significant finding was the inability of this PEP-2 initiative to make the Learning Modules a focal point of training. They thought modules were forms of lesson guides, books with teaching examples, booklets with directions for application of better teaching methods, teacher guides, books of examples, books with content, and so on. None of the teachers stated when asked that the Learning Modules are to be used to teach specific concepts to pupils using a methodology that integrates objectives, pedagogy, pupil exercises, materials, and assessment.

A large number of teachers admitted that they did not know about Learning Modules. Some had never seen one. Many aware of their existence recalled only that modules were delivered, registered, and then locked inside the school cupboard by the head teacher. This was substantiated during school visits when bundles of Learning Modules were discovered hidden away still wrapped in their original packing (unknown to the teachers).

With teachers unaware of the Learning Modules, it was pointless to further ask them about Learning Modules and the role of Learning Coordinators. Some teachers did have half-formed ideas about them — they believed that they were good materials, interesting to pupils, and perhaps also for teachers. On the other hand, some thought them impractical, time consuming, and required expensive materials. Many admitted to awareness of the modules in their school but never attempted to obtain them for review or use. Some rather brazenly asserted that the Learning Module concept was another of the Governments' many follies. When pressed to discuss the content of Learning Modules, however, no evidence was provided by any of member of any teacher focus group that indicated real knowledge about the modules. When pressed to talk about the contents of Learning Modules, they gave opinions about their imagined content.

When asked about the feasibility of the modular approach in Pakistan, the most frequent response was that they are too time consuming. All were "iffy" — if such-and-such is done, then the Learning Modules would be useful and could be feasibly implemented. The "ifs" included teachers and classrooms for every class, fewer subjects for primary school children, reasonable pupil/teacher ratios, more teaching aids and materials, frequent training, status recognition, and higher salaries

They were provincial variations about teachers' concept of the role of Learning Coordinators. NWFP teachers' attitudes were generally more positive than those held by teachers in Balochistan. The main problem was that teachers did not clearly see the link between the Learning Coordinators and the Learning Modules.

Learning Coordinators were seen as supervisors who occasionally try to help teachers improve their teaching. Some teachers had very negative attitudes, saying that the Learning Coordinators were selected through nepotism or bribery, they visit schools for free tea or lunch, they come to school with their pro forma evaluation sheets already filled for the head teacher to sign, their only interest is to claim travel allowances, they are a "useless lot."

But in their defence, Learning Coordinators were mostly seen as persons who come to school about once a month, check pupil and teacher attendance, and sometimes try to help out when a teacher poses a problem regarding a teaching difficulty with a particular lesson or concept. In Balochistan some teachers thought that Learning Coordinators are supposed to visit schools once a year, and were convinced that the money they believed was wasted on Learning Coordinators and Learning Modules would be better spent on the existing system and would have yielded much better results.

All the teachers understood that Learning Coordinators were responsible to some degree for their training. However, their role in teacher training was highlighted more in Balochistan than in the NWFP. The NWFP involved other persons in addition to Learning Coordinators

in teacher training more than Balochistan did. But teachers never did grasp the idea that Learning Coordinators were to implement use of the Learning Modules. In one district in Balochistan, one female teacher believed there was no Learning Coordinator assigned to her school, but in that district the appointed Learning Coordinator never distributed modules to schools because project funds for her travel costs were depleted.

Some teachers understood fairly well the contradictions between the practices of the regular system and the modular approach. The regular system demands "bachon ki tiyari" or "preparing children", in this instance, to pass examinations. Teachers and pupils must spend too much of their time pushing their way through too many textbooks; textbook-related performance is what counts in pupil examinations, and how teachers are evaluated by the SDEOs (the SDEOs' most popular form for monitoring the teacher is to check how many pages in a textbook have been completed).

Conclusions

PEP-2 provided significant input to primary education in a number of districts in three provinces of Pakistan. Inputs, to use a computer metaphor, consisted of hardware as well as software. Education requires both to operate properly. Hardware consists of buildings, furnitures, resources and documents like textbooks and Learning Modules; the software in PEP-2 was the integrated set of concepts that formed the modular approach.

Realizing that primary education in Pakistan lacked a unifying thread, PEP-2 planners conceived of Learning Modules as products that would help pull the system together. Learning Modules were to be important tools for poorly qualified and poorly trained primary school teachers that would strengthen classroom activities. Modules were to be tools for Learning Coordinators that would clarify ideas about what teachers should be doing in classrooms. Learning Coordinators would also be trained not only to train teachers in using modules but also to augment training with school visits.

Implementing the PEP-2 modular concept was the most significant responsibility of the project's administrators. It was important that they organized the tasks of training and module writing so that fidelity to the modular concept was maintained.

Evaluators visited classrooms in 55 schools in five districts in two provinces. What they discovered was not what might have been expected if the modular approach had been reasonably successful. Learning Modules were there but not used. The original conception underlying their intended function had been diminished to a point where Learning Coordinators and teachers regarded them as "model lessons." Training at all levels was not only ineffective but also managed to twist the idea of Learning Modules into something that resembled the criticized practices of teacher training in Pakistan.

Evaluation in this study looked at three things: products, processes, and effects. The most significant products were Learning Modules which were written, printed, and distributed to Learning Coordinators, and through them to teachers in schools. Processes were the preparation of modules and training persons to implement them. Effects were behavioral changes in classroom activities attributable to modules. The most difficult part of training was to convince FIU staff of the merit of PEP-2. PIU staff who would implement the approach in provinces also had to be introduced to the Learning Module concept and persuaded of its value for educational improvement.

A hard core of trained and motivated Learning Coordinators was required to begin the job of changing classroom activities in intended ways. The results of this evaluation are clear; intended effects never happened. The original PEP-2 conception was misread, never internalized, and misdirected. Ideas from teacher training, which are partly responsible for the sorry state of primary education, degraded the PEP-2 ideal. Once this happened, the damage spread through training at all levels.

The effect of this was seen in classrooms. No intended effect ascribable to Learning Modules was observed in any classroom visited or in any describable way by interviewed teachers. Focus groups told the same story.

In hindsight, one tends to say that the task was too ambitious given the situation in Pakistan's primary school system. But is such a defeatist perspective true?

From the terms of reference for this evaluation, one can infer that no one was expecting an ideal implementation of the PEP-2 plan. What one could expect, however, was an attitude held by PEP-2 staff that reflected acceptance of the fact that change was needed and that PEP-2's mission was to introduce change for school improvement. Implementation problems were not in the PEP-2 ideal, the problem was not keeping faith with the ideal. Innovation was called for but PEP-2 training slid into a familiar and ineffectual pattern.

There was no chance for teachers to change classrooms into places where pupils actively participate, acquire higher level knowledge skills, and are motivated to learn. Teachers were never trained to do this by the Learning Coordinators, who themselves were never trained to understand the function of Learning Modules.

Each of the evaluation's terms of reference is now considered in terms of evaluation findings.

(1) *Module objectives' linkage with the objectives in textbooks and the National Curriculum.*

This is examined under the assumption that objectives in the textbooks and the curriculum are sufficiently well-defined to form a basis for classroom teaching. They are not. Primary school textbooks and the National Curriculum for Primary Education do not state objectives with enough clarity for them to be a solid basis for developing module objectives. Module writing had to start by either amplifying existing objectives or creating new ones. Therefore, finding support for a linkage of module, textbook, and curriculum objectives was not possible. Only half of the modules were favorably rated in terms of their match with textbook and curriculum objectives.

The linkage of objectives was not the only feature of the modules which was investigated during the evaluation. A much more comprehensive rating exercise was undertaken and reported. Learning Modules received mixed ratings but in their present form could have provided a basis for improving teaching. That there is room for revision is certainly true, but revision should be done only after they are truly tried out in classrooms and their use is formatively evaluated. This was never done at an effective level as it should have been during the early stages of PEP-2.

(2) *Assessment through classroom observation of changes in teacher behaviour in accordance with the stated objectives of a sample of learning modules.*

(3) *Assessment through classroom observation of changes in student behaviour in accordance with the stated objectives of a sample of learning modules.*

These were the logical outcomes to address in the evaluation and this is what it carefully did. These two terms of reference point to changes that might be expected if classroom teaching had followed the intended PEP-2 prescription. If that were true, then one could ideally expect:

- (a) Teachers to be aware of the significance of using Learning Modules as the main driving force for their teaching because modules (a) provide clearly stated objectives, (b) are linked to textbooks and the National Curriculum, (c) indicate explicit teaching materials to use, (e) direct teaching methods, (f) tell teachers how to promote pupil involvement, (g) detail procedures to assess student learning, and (h) provide a basis for teachers to obtain help from Learning Coordinators and supervisors.

- (b) To find highly motivated teachers and pupils in classrooms full of activity, interest, and enthusiasm. Underlying this positive psychological environment would be a teaching strategy based upon the active goal-directed pupil participation.

Neither of these positive outcomes were observed. No baseline data is available to estimate differences between project and non-project classrooms nor is there any pretest to post-test comparison. What the evaluation staff saw, familiar as they are with primary classrooms in Pakistan, was no different in project classrooms than what they would see in typical classrooms. There was no opportunity to observe module-related effects of learning as no modules were ever used. Even the anecdotal recollections of a few teachers who claimed to have used modules were vague in detail.

- (4) *Strengths / weaknesses of the modular approach in terms of its use, feasibility, and acceptability, and its ease and frequency of use by teachers and students.*

To continue the computer metaphor, the strengths and weaknesses of a system can only be evaluated if the system is operating - if the machine is turned on and an appropriate program is run. The PEP-2 initiative was the appropriate program which never ran. Although the machine (the schools) was on (schools were functioning), the wrong program was running. A program based on traditional teacher training practices was operating rather than the Learning Module approach.

The end results observed in classrooms could only point to weaknesses rather than strengths. But these were not weaknesses attributable to a failure in the modular approach. They were weaknesses inherent in the primary school system and in the PEP-2 organizational structure. Modules had never been implemented, so module effects never became realized. One can say that what was observed was the effects of "non-intervention." This is not as obvious as it might sound, for a non-intervention may have effects that damage later improvement efforts.

It is a mistake to say that teachers never accepted the Learning Modules. That would be wrong because they never became familiar enough with them to reach a point of acceptance or rejection.

The team listened to lip service in praise of Learning Modules at all levels — from Project Directors, Learning Coordinators, DEOS, and teachers. It may even be true that some modules were used for demonstration exercises. Some teachers said they occasionally used modules, but no evidence supports this claim.

None of the 51 teachers observed and interviewed could recall the content of any specific module. They learned the terminology used to describe the merit of the module approach but not the intended meaning of those words. They learned the name of a concept called "Learning Modules", but because the name was attached to another approach than what was originally intended, they never had a chance to learn what PEP-2 planners meant.

- (5) *Factors constraining the use of modules such as lack of materials, physical facilities, supervisory support, and incentives.*

This is the area towards which the evaluation was compelled to go. Indications are found throughout this report that implementation was a failure, and a key cause of this failure was improperly conceived training. Training suffered because of the absence of a well-integrated team with a commitment to the initial PEP-2 ideas and ideals and the ability to transmit these ideas and ideals to classrooms.

Lack of material is a factor often mentioned by teachers and Learning Coordinators to explain the failure to implement use of the modules. This is a false excuse. Learning

Coordinators or teachers who had learned what modules really were would not have found required materials a problem.

Obviously the school context is a severe problem when introducing any innovation. Physical conditions in many schools, where pupils are expected to acquire the motivation to learn, are often deplorable. No one who cares for teachers and pupils would accept schools that typically have only two rooms, that offer a relatively short school day, and have bad teaching, no resources, and a phantom curriculum. These circumstances make efforts for school improvement seem bleak. But that view only allows problems to be avoided, disregarded, or denied. There is no reason to believe that Pakistan, with the talented people it has, could not begin to solve the problems of education if the will and effort to attack them were mobilized. All problems do not have to be solved at once. Significant ones can be dealt with planned priorities. To illustrate, one problem is the examinations system. School examinations are important to many persons, but the assessment of pupil learning is a mixture of unstandardized and unreliable methods, dissociated from the curriculum, with slipshod reporting. There is no apparent pressure for setting common examinations developed in a professionally defensible way. If the goal is to have objectives drive teaching, and if objectives and assessment correspond, then assessment can help to drive teaching in intended ways.

“Top down” decision-making in Pakistan and very weak links between components of the education system almost guaranteed that PEP-2 would run headlong into difficulties. All organizations have established norms and values, formal and informal, which direct their objectives and procedures. The PEP-2 initiative was outside the norms and values of the organizations given responsibility for its implementation. Since they had to carry out implementation, the predictable thing happened. The organizations abandoned PEP-2 ideas for those that matched their established norms and values.

Educational improvement boils down to improving the skills and attitudes of teachers, because improvement in teaching and learning is a goal that is realized in classrooms. Variation in classroom practices is small in Pakistan. Perhaps a network of smaller pilot improvement efforts, each limited to a small number of schools, could trial a variety of improvement alternatives. This would require planning, continuous evaluation, intense Hands-on training, and good management. But the payoff might be high in the long run if some improvement alternatives worked.

Recommendations

At the outset, it is important to emphasize that the learning module concept supported by World Bank was an educationally sound idea and investment in the production of learning modules was a good decision. The expected benefits of modules on teaching were not realized because of PEP-2's weak implementation strategy. Module effectiveness was never really tested because modules were never really used by teachers. This implementation failure resulted because project directors could not properly institute two critical components of the original project design — they failed to effectively establish a system of formative evaluation and they failed to move PEP-2, at appropriate points of time, through developmental phases that would leave it integrated with regular system.

Intended formative and summative evaluation was amply funded under the category of “research studies,” but was never carried out in ways that met minimally professional standards. Some evaluation studies were apparently carried out but were of little use for project policy making. Money was also set aside for technical assistance to help with the design of studies, but was not used by the Government until the project was virtually completed. A large portion of this research funding was never spent. Experimental studies required trial and error flexibility on the part of project directors, but the feeling of the sponsor is that they were very reluctant to initiate any work not rigidly specified.

PEP-2's original intention was not to develop a parallel delivery system of Learning Coordinators who assisted teachers in using modules. PEP-2 was to start with an experimental phase and then move on through several phases and eventually be integrated with the regular system. Until the time the present evaluation study was started at the end of the project, PEP-2 never moved beyond the first phase. As a consequence, Learning Coordinators operated outside the established supervisory system throughout the life of the project.

With the hindsight of the present evaluation study, what one can recommend for continued work is to implement a newly-conceived school improvement project. Two major components of PEP-2, Learning Modules and Learning Coordinators would be gainfully utilized in the proposed school improvement project. However, its design must avoid the problems of PEP-2, which mainly were lack of proper formative evaluation, an ineffective training scheme, not starting on a small scale in the beginning with a series of pilot studies, and the creation of Learning Coordinators with *unofficial* roles that competed with the official roles of supervisors. In other words, the proposed project addresses those components of PEP-2 which were not properly developed.

The recommendations are to design a curriculum for school improvement that can be feasibly implemented in primary schools in Pakistan. Costs in the beginning stages of the proposed project will largely be allocated for planning, early production of lesson units, and formative evaluation of training and module use in a limited number of experimental pilot schools. An evaluation study will be carried out following the first implementation phase to measure project performance, the effectiveness of training, module use by teachers, and to estimate the effects that the use of modules have on pupil learning. Collected evaluation data will be assessed to determine how to proceed into a second phase of the project. As the proposed project moves from phase to phase, evaluation data will be essential for decision making.

Strong implementation of the PEP-2 approach required clear project definition, clear goal-directed plans, and monitored activities that coordinated the work of supervisors, curriculum developers, teacher trainers, head teachers and teachers. PEP-2 failed in its implementation because it never found a solid project definition, and consequently never evolved an effective implementation strategy that connected the work of these groups. Early formative evaluation might have alerted PEP-2 management to the problems it encountered.

In the discussion below, problems in the PEP-2 approach are identified, followed by recommended actions (18 in number) that hope to avoid PEP-2 problems. Again it is emphasized that the recommendations represent only a planning outline, and that details would need to be developed by a sponsor's planning team. The recommended project is organized into four functional components.

- (1) Management (technical and operational);
- (2) Curriculum (planning and product development);
- (3) Implementation (training and guidance for teachers);
- (4) Evaluation (internal formative assessment).

Each component must be defined by explicit technical and management plans that specify the nature of tasks to be carried out, products that result from these activities, staff skill requirements, schedules, materials needed, and cost estimates. When this is properly done, the project can be monitored and evaluated.

PEP-2 Management Problems

- PEP-2 never formed a dedicated commitment to the modular approach. “Top down” management and weak links between components of the education system in Pakistan created severe stumbling blocks for PEP-2 administration. Curriculum development, teacher training, supervision, and pupil testing were disconnected. PEP-2 required their coordination for effective planning and execution.
- PEP-2 established a training program that reflected ordinary teacher training practices. New training agendas were needed, but Learning Coordinators and teachers were trained according to old prescriptions. Ineffective training is itself partly to blame for many problems that PEP-2 hoped to overcome. Learning Coordinators and teachers never had a clear grasp of the intended functions of learning modules.
- Learning Coordinator positions remained outside the official supervisory structure up to the end of PEP-2. In fact, the entire PEP-2 operation was outside the establishment. As indicated the sponsor’s intent was that the regular system would absorb PEP-2 by the time project ended. Integration was to be done in phases where research would guide phase-in policy. It is impossible now to predict how the last minute integration of PEP-2 into regular system will work out since no research and no evaluation was carried out.

Recommendations for Project Management

- (1) A project Review Panel should be established to periodically review project goals, plans, achievements, and expenditures. This will help to insure that the recommended project leads to a program that can be implemented within the context of schools in Pakistan.
- (2) Each component of the recommended project should be planned in detail with written plans drawn up. The written plans will specify answers to the “why, what, how, who, when, where” questions, as well as cost estimates.
- (3) Leadership and staff of each component of the recommended project must submit an operational plan, subject to review every six months by the Project Review Panel, that specifies component
 - (a) Activity and outcome objectives;
 - (b) Outcomes described in measurable ways;
 - (c) Activities designed to achieve outcomes;
 - (d) Staff skills needed to carry out procedures;
 - (e) Time-lines and connections between tasks and outcomes;
 - (f) Staff personnel assignment;
 - (g) Progress to date;
 - (h) Costs.
- (4) Component plans must have ongoing continuous evaluation and formal evaluation reporting every six months to assess component performance and to determine needed adjustments.

PEP-2 Curriculum Problems

- PEP-2 materials development, i.e., Learning Modules, was its strong point. Modules received mixed but generally favorable ratings from expert reviewers. Sponsor investment in the modular approach as a basis for lesson planning was well justified and the modules themselves can be used as a basis for redesigning supplemental material.

- Learning Modules in their present form could have provided a basis for improving teaching. Revisions are not doubt needed, but revision specifics can only be determined after modules are tried out in classrooms and their use is formatively evaluated. This really never occurred in PEP-2.
- It would be wrong to say that teachers did not accept Learning Modules. They never became familiar enough with them to reach a point of acceptance or rejection.
- Primary school curriculum adjectives were too vague for module production and needed explication. Module writers had to either amplify existing objectives or to state new ones. PEP-2 however had no real control of the curriculum, therefore, the linkage of module, textbook, and curriculum objectives was tenuous.
- Textbooks are the primary resource for teachers. Teachers explain concepts to pupils by reading from textbooks. Supervisors evaluate teachers on their use of textbooks. This is an impediment to the use of supplemental material unless directions given to teachers to improve the classroom environment through structured teaching can be incorporated within textbooks (as in the USAID-sponsored project in the NWFP), or integrated in a usable manner.

Recommendations for Project Curriculum Development

- (5) Careful review must be made of past and current school improvement projects in Pakistan. There are a number of these that come immediately to mind. The AED projects in Peshawar and in Quetta, the UNO/ESSP project in Peshawar, Agha Khan Foundation's field-based Teachers' Training Project in Northern Areas of Pakistan, Teachers' Resource Centre, Karachi, Pak-German (GTZ) Primary Education Charsadda District project, Ali Teachers' Training Institute of Lahore University of Management Sciences, and Teachers, Training Programme of Agha Khan University at Karachi. Discussions indicate that most of these projects have strong curriculum design and development features.
- (6) Once review is completed, project activity and pupil learning outcome objectives should be developed through coordination with the Curriculum Wing of the Ministry of Education. This will help to insure that any materials developed will have official endorsement. Activity objectives pertain to project tasks in curriculum design and the preparation of curriculum materials created according to design specifications. Outcome objectives are those in a ministry-approved curriculum development plan for lesson units based on the outcome objectives.
- (7) Learning outcomes must be described in measurable ways that form a basis for developing corresponding criterion-referenced pupil assessment procedures. It should be a part of the teachers job to carry out prescribed continuous assessment procedures, maintain records of pupil achievement, and know that these records are inspected by supervisors. Teachers would need in-service training. This assessment would be a very effective way to influence changes in classroom teaching. If assessment is important enough to "count" in supervision, then teachers will teach what's assessed.
- (8) The format for integrating lesson unit and textbook content must be designed. Optional formats may be tested through pilot trial and evaluation.
- (9) Lesson unit development should attend to the following considerations:
 - (a) Determine the subject x class levels which are to be covered in the curriculum, for example, classes 1-3 in mathematics.

- (b) Review existing curriculum materials and source documents as well as the work of subject content specialists to create a scope and sequence table for concepts/topics.
 - (c) Produce a resource book containing what pupils are to know about each concept, procedures in the subject, and when knowledge and procedures are to be applied.
 - (d) For each selected concept, develop specifications for teacher materials and aids, student materials, teaching activities, student activities and exercises, and procedures to assess student learning (criterion-referenced and continuous assessment).
 - (e) Develop a resource book that describes appropriate teaching methods, strategies, and techniques, as well as classroom management techniques.
 - (f) Develop resource book of pupil learning assessment tasks. These tasks should resemble teaching activities in the lesson units. Assessment tells teachers what is to be learned by students and how to measure this learning.
 - (g) Prescribe a format for combining textbook and lesson unit content into a single teacher's guide. The separate text must be integrated in some usable way. Student materials may also be specified. Whether through annotation or mixed presentation, PEP-2 Learning Modules will provide a useful resource.
 - (h) Develop lesson units: Using the scope and sequence charts and the two resource books, lesson unit writers should develop units that contain essentially the same framework as that used for the preparation of PEP-2 modules, which (1) provides clearly stated objectives linked to textbooks and the National Curriculum, (2) indicates explicit teaching materials to use, (3) specifies teaching methods, (4) tells teachers how to promote pupil involvement, (5) details procedures to assess student learning, and (6) provides a basis for teachers to obtain help from supervisors.
- (10) All of these products must be used as essential training materials.

PEP-2 Implementation Problems

- PEP-2 implementation was a failure, and a key cause of this failure was improperly conceived training. Training suffered because of the absence of a well-integrated team with a commitment to initial PEP-2 ideas and ideals and with the ability to transmit these ideas and ideals to classrooms. The consequence of poor training was that Learning Modules were not used.
- Training at all levels was ineffective because it changed the original conception of the modular approach into one similar to teacher training practices in Pakistan. Learning Coordinators were often trained by persons who had no special PEP-2 A-Level training. The trainers had to rely on what they knew and they did not know much about the PEP-2 modular approach.
- At the completion of training, Learning Coordinators were unclear of their roles in implementing the use of modules by teachers. Teachers' ideas of modules never became crystalized because they were never trained to understand the function of Learning Modules.

- Lack of material, mentioned by teachers and Learning Coordinators to explain the failure to implement use of the modules, is a feeble excuse. If the PEP-2 Learning Coordinators and teachers had learned what modules really were, and were shown examples during training, they would not have found required materials a problem.

Recommendations for Project Implementation

- (11) Identify the significant agents of implementation. They will form the implementation planning team. Education is not the sole possession of the Ministry; it belongs to society, and persons other than educationists should be represented on the planning team. One critical role for the implementation planning team is to determine criteria for the selection of master trainers.
- (12) Select and train master trainers who are responsible for preparing the initial lesson units and training teachers in the use of lesson units. The master trainers are trained by members of the planning team (training is NOT handed over to the old guard) who will develop master trainer selection criteria and conduct training sessions for them. Training will be based on a detailed and approved training plan with knowledge and activity objectives and evaluation procedures designed to revise the programme as necessary.
- (13) Select a small number of experimental schools for implementation. There must be an attempt to measure gains in performance attributable to new curriculum materials because this is not only what school is mainly about, but also is an important incentive for trainers and teachers. No rigid statistical design is necessary; perhaps a treatment school using, for example, a unit in mathematics but not in language at class 1 is paired with a school using language but not mathematics at the same class level; thus the two treatment schools serve as controls for one another.
- (14) Master trainers train teachers in the experimental schools. This is not like PEP-2 where teachers were told 'about' the curriculum. Teachers will 'do' the curriculum. They will assist, as part of their training, in developing lesson units (giving them a sense of ownership) under the close guidance of master trainers, and will practice teach their units. Head teachers will be trained to act as on-line supervisors of the use of lesson units.
- (15) Master trainers must train supervisors who will assist teachers when using the lesson units. Thus master trainers and supervisors are separate groups. Unless supervisors are thoroughly knowledgeable about the rationals and use of new materials, they will simply apply old criteria when evaluating teacher and pupil performance.

PEP-2 Evaluation Problems

- PEP-2 formative evaluation, if ever attempted was ineffective. It was needed most early in the project to establish and refine procedures. Many of the problems identified in this evaluation would have been detected early and project changes could have been introduced. PEP-2 proceeded without solid feedback information.
- There is no robust continuous assessment system at the primary level which can act as a catalyst to improve teaching. Assessment procedures signal to teachers what needs to be taught. The goal is to have objectives drive teaching; if objectives and continuous assessment tasks correspond, then assessment can help to drive teaching in intended ways. Assessment of pupil learning is

currently a mixture of unstandardized and unreliable methods, dissociated from the curriculum, and characterized by slipshod reporting.

- Lack of well-defined continuous assessment meant that learning gains attributable to the modules could not be evaluated, even if the modules had been used.

Recommendations for Project Evaluation

- (16) Informal evaluation is a continual exercise in any well-managed project and should be part of the management plan for the recommended project. A full formative evaluation should be carried out at half-year intervals. This will concentrate, when units are taught in the experimental schools, on unit feasibility, acceptance, and unit strengths/weaknesses, on the effectiveness of training; on estimating learning effects attributable to the units' implementation. The evaluation will also focus on project administration and costs. A formal report is prepared.