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The Primary Education Development Program

P A K I S T A N

Final Report

September 1994

Prepared by:
Academy for Educational Development, Inc.

With Subcontractors:
Creative Associates International, Inc.
Florida State University

Harvard Institute for International Development

USAID Contract No. 391-0497-C-00-0546-00





PED Program

*Dedicated to the children of
NWFP and Balochistan*

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Contents

Executive Summary	i
1. Background	1
2. Objectives of the Project	18
3. The Program Approach	36
4. Program Implementation and Development	45
5. Administration and Management	79
6. Curriculum and Instructional Materials Reform	110
7. Teacher Training and Supply	144
8. Construction Management	166
References	174

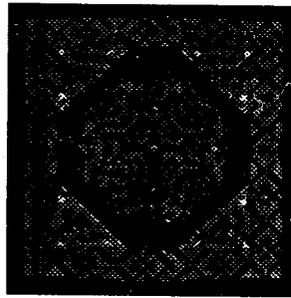
List of Tables

1.	Literacy Rates for Pakistan and Its Four Provinces for Ages Ten and Above, 1981	4
2.	Participation Rates for Primary Education, 1983 through 1984, by Gender, Region, and Province	5
3.	Dropout Rates for Primary Education, 1983 through 1984, by Gender, Region, and Province	6
4.	PED Program Enrollment Targets, 1990 through 1999	13
5.	Administration and Management Program Component	57
6.	Teacher Training and Supply Program Component	58
7.	Curriculum Program Component	59
8.	Percentage of Primary Schools with Pupil-Teacher Ratio of Less than 50 to 1	69
9.	Percentage of Certified Primary Teachers Trained, 1988-89 and 1993-94	69

List of Figures

4.1	Primary Enrollment (Grades K-5), 1988-89 through 1993-94, NWFP	61
4.2	Ratio of Males to Females in Primary Grades, 1988-89 through 1993-94, NWFP	61
4.3	Primary Enrollment (Grades K-5), 1988-89 through 1993-94, Balochistan	62
4.4	Ratio of Males to Females in Primary Grades, 1988-89 through 1993-94, Balochistan	62
4.5	Kachi-Pakki Dropout Rate, 1990-91 through 1993-94, NWFP	64
4.6	Completion Rate for Third Grade, 1990-91 through 1993-94, NWFP	64
4.7	Kachi-Pakki Dropout Rate, 1990-91 through 1993-94, Balochistan	65
4.8	Completion Rate for Third Grade, 1990-91 through 1993-94, Balochistan	65
4.9	Teacher Supply, 1988-89 through 1993-94, NWFP	68
4.10	Teacher Supply, 1988-89 through 1993-94, Balochistan	68
5.1	Current Plan of Organization, Directorate of Primary Education, Balochistan	84
5.2	Current Plan of Organization, Directorate of Primary Education, Balochistan	97
6.1	Current Plan of Organization, Balochistan Instructional Materials Development and Training Cell	134

Executive Summary



Executive Summary

The broad *sector goal* of the Primary Education Development (PED) Program in the Northwest Frontier Province (NWFP) and Balochistan was to strengthen the institutional capacity of the two provinces to formulate and implement equitable policy that would improve access to primary education and its quality. The *project purpose* was to increase access to primary education (grades 1-5) and to improve equity, quality, and efficiency in the sector. Achievement of that purpose would increase literacy substantially. In ten years, that is, by 1999/2000, enrollments were expected to double, increasing from 1.5 million students to 3 million. Girls' enrollments were to triple, boys' to nearly double. Because of the Pressler Amendment, which mandates termination of U.S. foreign assistance to Pakistan, the PED program was reduced from 10 years to 4.5 years. Contractor assistance was provided from February 1990 until August 1994; USAID assistance will end in September 1994.

The USAID counterpart agencies were the ministries of education in NWFP and Balochistan. The Academy for Educational Development was the prime contractor, assisted by subcontractors Creative Associates International, Inc.; the Florida State University; and the Harvard Institute for International Development. All provided long-term field advisers. A separate USAID contract provided for degree and short-term participant training.

USAID chose to implement PED as a *program*, rather than a *project*, because it put the burden of implementation in the hands of the provincial governments and limited the management burden on USAID for what was originally planned to be a \$280 million program, with more than \$150 million of that earmarked for school construction. USAID released funds periodically to the two provinces as they completed activities set out in their annual plans that led to achieving goals ("benchmarks") agreed to by USAID and the Pakistanis. In USAID's words, this approach went "a long way in establishing [the] provincial governments' ownership of the PED program and ensuring the sustainability of the initiatives taken under PED . . . The program approach adopted by PED has been acknowledged by all major donors as well as government officials as essential for such long-term and complex activities as PED."

NWFP, the smallest province of Pakistan, contains 12 percent of its people. The province is densely inhabited and has far better road and transportation systems than Balochistan. It also has a far more rigid bureaucracy. Balochistan, on the other hand, although Pakistan's largest province, contains only 5 percent of its population. The majority of the 5.5 million people are widely scattered and reside in rural areas in approximately 5,000 villages and towns. Balochistan is also Pakistan's most underdeveloped province. These differing conditions in NWFP and Balochistan were responsible, in part, for the different implementation schedules in each province to achieve PED goals.

In 1988-89, one year before PED began, only 7.82 percent of the total government expenditure, or 2.4 percent of the GNP, was on education. According to the 1981 population census, the national literacy rate for ages ten years and above in Pakistan nationwide was 26 percent. The rate

in NWFP was 16.7 percent; in Balochistan, 10.3 percent. Rural women were the most adversely affected group: only 3.8 percent were literate in NWFP and 1.8 percent in Balochistan. Primary participation rates reflected similar disparities: the 1983-84 figures for NWFP revealed a rural female participation rate of 11.6; for Balochistan, it was 3.7. The dropout rates likewise reflected the disparities: for the same period, 78 percent of rural girls in NWFP dropped out of school before reaching grade 5 compared with 93 percent in Balochistan. In NWFP, fifth-grade enrollment accounted for 10 percent of the total primary enrollment; in Balochistan, the figure was 7 percent.

The figures clearly pointed to the urgency for remedial measures to improve access and increase enrollments, to improve quality and reduce dropouts, and to achieve both objectives equitably so that gender and urban-rural disparities could be evened out. The PED Program, the mechanism through which these objectives were to be achieved, was designed to address specific underlying problems:

- ◆ *The paucity of teachers, particularly female teachers in rural areas.* In 1988-89, 25 percent of primary teachers in NWFP were female; in Balochistan, only 14 percent were.
- ◆ *The insufficient number, as well as the location and physical state, of primary school buildings, especially for girls.*
- ◆ *The poor quality of primary school teaching.* Many teachers were untrained formally. Teacher training courses did not emphasize classroom instruction, and trainers lacked experience in primary school teaching.
- ◆ *The difficulty of the primary-level curriculum and textbooks for early learning and the lack of supplementary teaching materials for teachers.*
- ◆ *The absence of a system of field-based observation and evaluation.* Textbooks and other materials were not field-tested. No achievement testing was undertaken to determine whether or not students had accomplished learning objectives.
- ◆ *The poor management of primary education.* Policy planning and decision-making were not based on research and analysis and use of reliable data. Instructional supervision was neglected.

Continued support for program objectives of increased access, quality, efficiency, and equity once PED ended required an educational system capable of solving its own problems systematically and scientifically. PED intervention was, therefore, directed at institutionalizing a process of

continuous self-improvement within the educational system. The methodology, on which the entire approach of the program was based, consisted of seven steps:

1. **Solution-oriented research:** empirical evidence presented to indicate that a proposed solution is possible.
2. **Plan of action:** proposed solution translated into a strategy, including statement of objectives and activities required to achieve the objectives.
3. **Supporting structures:** materials, training, courses, other mechanisms provided to support implementation of the solution.
4. **Trial-testing of elements of the solution:** limited testing conducted to determine whether solution produced desired results.
5. **Improvement of the innovation:** weak or nonproductive elements of the solution modified and retested.
6. **Wider distribution:** improved elements tried on a broader scale.
7. **Continuous improvement:** other innovations that might produce even better results tested, modified, and/or experimented with.

To achieve its goals efficiently and systematically, the PED Program was divided into four components: (1) administration and management, (2) curriculum and instructional materials development, (3) teacher supply and training, and (4) construction. An annual work plan set targets for each year and described activities needed to enable their accomplishment. The "enabling activities" that constituted program intervention were based on a series of studies conducted to provide a clear understanding of the problems of primary education. The studies included the following:

- ◆ **Organizational studies:** how to bifurcate the Directorate of Schools and develop the organizational structure of the new directorates
- ◆ **The *Human Resource Survey*,** which collected information on the status and prospects of primary education in the villages of both provinces
- ◆ **A study of the problems of teaching Kachi children (the equivalent of kindergarten)**
- ◆ **A study of the problems teachers face in multigrade teaching**

- ◆ A study of content knowledge of PTC trainees and in-service primary teachers (NWFP) and a companion study of the content knowledge of grade 5 teachers in mathematics and science
- ◆ A study of successful teaching practices in mathematics, science, and Urdu
- ◆ Organizational studies of the Curriculum Bureaus
- ◆ An organizational study of the provincial Textbook Boards
- ◆ A study and compilation of personnel regulations
- ◆ Studies of Directorate staff.

ADMINISTRATION AND MANAGEMENT

The Program Assistance Approval Document (PAAD) or the Program Grant Agreement suggested a number of actions to achieve program goals:

Establish directorates of primary education. Following a study of organization of pre-university education, NWFP formulated a plan to bifurcate the School Department into a Directorate of Primary Education and a Directorate of Secondary Education. The Directorate of Primary Education, established in June 1990, became operational on January 1, 1991 and officially responsible for managing 55,000 employees and approximately 18,000 schools. Male and female district education officers (DEOs) were appointed as top field officials in charge of primary education. PED assisted with responsibility allocations and job descriptions.

The process took longer in Balochistan. After considerable institutional strengthening, the Directorate was established in October 1993, with full fiscal and administrative authority. By 1994, the Directorate was fully staffed, budgeted, and operational. Detailed, functional job descriptions, including a program quality and monitoring component, were developed and approved. The Service Rules of government were modified to remove legal restrictions to gender equity in posting.

Develop educational management information systems (EMIS) and encourage the use of empirical data to improve the planning process. In NWFP, a computerized EMIS was established and has been in operation since the Fall of 1990, when the first EMIS-managed annual school census was conducted. EMIS personnel and consultants developed computerized financial and personnel management systems and a computerized teacher training tracking system. All are operational. The Northwest Educational Assessment Program (NEAP) was created to provide reliable empirical data to educational administrators and managers

Establishment of the Balochistan EMIS (BEMIS), now fully operational, was an early priority in the province, under way even before USAID grant funds were available. Reliable data are provided through the school census conducted semiannually (seven have been conducted since the start of PED); the *Human Resource Survey*, funded by UNICEF and supported by PED and BRIDGES, that surveyed 9,004 villages throughout the province. Computer cells exist in district offices and in the directorates of primary and secondary education.

Enhance the capacity of the directorates through improved procedures and training. In NWFP, in-country training programs in new management methods and procedures and job-specific management skills and knowledge were conducted; training was offered in effective teaching practices and new instructional materials, and classroom observation skills and evaluation; and study tours to observe programs in other developing countries and the United States were provided. Annual school census data on pupil achievement, dropout and repeater rates, and other critical indicators form the empirical databases.

The improved organizational structure of the Directorate in Balochistan led to improved management and academic monitoring. All field and Directorate officers were given job training, and a desk manual was developed that summarized the authority of officers. Workshops on use of empirical data in planning and decision-making were offered. Female officers eligible for assistant director or head-mistress positions were trained in basic management skills.

Facilitate the promotion of female employees. The NWFP Directorate has employed females in top management positions from the beginning in NWFP, although males predominate despite no official gender bar. In-country training has been provided equally to males and females.

In Balochistan, one of two additional directors and one of five deputy directors are female. Thirteen DEO and 14 SDEO posts were sanctioned. All of the DEO posts were filled. At least three of the seven assistant director posts must be filled by women. Professional training and study tours were distributed equally, and nine out of eleven long-term degree participants were women. The age limit and minimum qualifications requirements were adjusted so that more female teachers could be hired.

Use participants who receive long-term training. All of the NWFP Primary Directorate employees who have received M.A. degrees in the United States are again employed by the Directorate in positions of advanced responsibility. All Balochistan long-term participants signed a commitment to work in primary education when they return to Pakistan. Of the two returned participants thus far, one is working as a senior-level consultant with the Directorate of Primary Education; the other is Managing Director of the Society for Community Support for Primary Education in Balochistan.

Improve financial planning and reporting. NWFP developed a computerized financial management information system, debugged it, tried it in experimental sites, and revised it. It is now in use in the headquarters and the DEO offices.

Efforts to computerize the financial system in Balochistan will require at least another year. A successful effort was undertaken to introduce financial accountability into the manual system, including receipts for cash transactions, careful tracking of and accounting for funds, and a nonlapsable PED account.

Involve the private sector. Mobilizing the private sector was felt necessary because governments of both provinces were unable to meet the resource requirements for expanding school places and increasing girls' enrollment. The Frontier Education Foundation was established in NWFP and is operational. A census of private schools, underway at the time of this final report, will help locate NGOs and community-based organizations possibly interested in organizing community-based school programs in the province.

The Balochistan Education Foundation was established in 1993 to assist the private sector in establishing educational institutions, to give facilities improvement grants to private educational institutions, and to provide loans or plots to improve the quality of education. The Habib Bank Trust supports home schools in Balochistan. PED provided teacher training assistance and monitored performance in the schools.

Encourage community participation (an activity added as the program evolved). PED and UNICEF co-financed the establishment of 90 community schools in NWFP. If the evaluation of this effort is positive, the Frontier Education Foundation intends to support creation of 250 private community schools.

Using a grass-roots approach, or the community support process, for increasing girls' access to school proved extremely effective in the rural areas of Balochistan. An independent NGO was established to promote primary education for girls, working with the community and government to create a partnership.

CURRICULUM AND INSTRUCTIONAL MATERIALS DEVELOPMENT

The PED Program placed implementation of an effective instructional system at the core of quality reform. Central to this system was the development of improved materials for classroom use. In NWFP, two major conditions contributed to the poor quality of instruction: (1) the large class of kindergarten, or Kachi, children who were not officially recognized and who had no appropriate instructional materials; and (2) the predominance of multigrade schools and the absence of multigrade teaching materials and methods. In 1991, an Instructional Materials Development Cell (IMDC) was established in the Directorate of Primary Education to develop instructional materials and accompanying teacher guides for mathematics, science, Urdu, and Pashto for Kachi through class 5. To assist in coping with demands for teacher support programs and to develop a new radio English program, the IMDC invited the Curriculum Bureau to open

a branch office (CBB) on its premises in 1993. In less than three years, the IMDC with the associated CBB could claim the following accomplishments:

- ◆ Instructional materials for Kachi, Pakki, second, and third classes, including student texts, teacher guides, and instructional aids
- ◆ Supplementary teacher support materials in reading and mathematics for classroom use
- ◆ Preservice and in-service teacher training units in practical classroom management and subject content skills
- ◆ Materials-specific training of teachers and supervisors in 21 districts and 750 schools
- ◆ Assessment and monitoring systems to ensure continuous improvement of materials and the accountability of responsible staff
- ◆ Development of a three-year interactive radio program.

Work on instructional materials development in Balochistan began modestly and consisted primarily of research studies and development of classroom support materials. Eventually, the Government of Balochistan determined that to bring about change in teacher and student behavior, the province would have to change the textbooks, continue efforts in developing Kachi-level materials, and continue lobbying for the recognition of Kachi as an official primary-level class. The obstacle to this resolve was the lack of an existing government organization with components focused solely on issues related to primary education instructional materials. In 1992, the Balochistan Instructional Materials Development and Training Cell (BIMDTC) was established to meet those needs. In two years, BIMDTC was responsible for the following major accomplishments:

- ◆ New instructional materials for Kachi and Class I, including student texts, teacher guides, and instructional aids
- ◆ An organizational structure to provide for the continued development of textbooks and support materials using the writing team or workshop approach to instructional materials development
- ◆ An operational desktop publishing facility, with trained personnel capable of producing quality and attractive prepress materials

- ◆ A system of instructional materials development in place, which includes development, testing, revising, testing, and revising prior to production and implementation
- ◆ New printing procurement procedures in place to ensure that local competitive bidding is based on the quality of the product.

TEACHER SUPPLY AND TRAINING

The PED Working Papers (1989) noted the central issues relating to teachers:

- ◆ How to increase the supply of teachers sufficiently to staff the expected expansion in the primary system
- ◆ How to attract more teachers to service in rural areas
- ◆ How to attract and keep more qualified teaching staff
- ◆ How to make training qualitatively better and more relevant
- ◆ How to ensure that qualitative improvements in instruction reach the classroom.

In the Northwest Frontier Province, PED focused on identifying policies that inhibited the effective operation of primary schools; on increasing training opportunities for teachers, with an emphasis on materials-specific training; and on improving supervisory support. Construction of new GCETs for girls brought preservice Primary Teaching Certificate (PTC) training closer to the homes of the girls. A condensed PTC course and funding of Allama Iqbal Open University (AIOU) candidates helped eliminate the backlog of untrained teachers.

Officers in nearly every district participated in introducing, monitoring, and evaluating new IMDC materials. They worked with teacher guides, detailing the steps to be taken in teaching each lesson in the classroom. Training units based on classroom observation and the expert advice of model teachers were prepared in the IMDC for use in preservice and in-service courses. Training workshops were conducted to increase the awareness of learning coordinators about pedagogical concepts and methods that might be used to improve the quality of classroom instruction.

When the PED Program initiated its first activities in 1990, the two most significant teacher-related problems in Balochistan were the absence of qualified teachers, especially females in far-flung villages, and a poor quality training program unable to keep up with the backlog of untrained in-service teachers. The situation was exacerbated by estimates that the number of primary student in the province would triple in ten years, thus requiring an additional 10,500 teachers. On the basis of the findings of PED studies about the conditions of the schools, the

composition and size of classes, dropout and repetition patterns, teaching practices, and the attitudes of parents and community leaders toward girls' education, PED focused its early efforts in Balochistan on increasing the number of female teachers in rural areas and on building community support for girls' education. Since 1990, a mobile teacher training program has brought training closer to potential female teachers and supporting them in opening schools for girls in areas where girls' schools have not existed before. The program now coordinates with the Community Support Program, which provides a link between education departments and communities in rural areas to ensure efficient and effective use of local and provincial resources for girls' education.

To improve instruction, PED efforts in Balochistan were directed first at eliminating the backlog of untrained teachers through an accelerated program that graduated nearly 8,000 teachers. The training colleges are now being converted to preservice institutions in which teachers will be trained before they enter service rather than as under the previous system in which they were trained after serving a number of years in classrooms.

CONSTRUCTION

USAID placed responsibility for the oversight and technical assistance for all construction with the USAID Office of Engineering. The contractor, AED, was responsible for preparing school location plans in collaboration with provincial authorities; assisting the provincial governments in preparing the physical requirements of new and existing schools (for example, water supply, latrines, physical layout/student flow); tracking, through status reports to USAID, the construction program based on information provided by the USAID Office of Engineering; and arranging and implementing short-term in-country contracting and management training for both provincial authorities with the guidance and assistance of USAID Office of Engineering. The contractor was *not* responsible for advice to the provincial staff on planning and managing construction; procuring Architect/Engineering (A/E) and construction services; monitoring/supervising A/E and construction contractors; preparing cost estimates; reviewing submittals of A/E and construction contractors; evaluating construction site; monitoring construction/design quality and progress; and assistance to the Mission and provincial staff in achieving annually negotiated benchmarks for construction.

For various reasons, problems existed with government management of construction in both provinces, and the Education Department had little influence regarding the progress and quality of construction. With PED encouragement and support, both provinces hired private-sector engineering firms — in NWFP, to study the problems and recommend solutions; in Balochistan, to enhance the province's capacity and capability for construction management. As a result of the NWFP six-month study, the province engaged a Construction Advisory Unit on an experimental basis for three years to oversee management of construction in three divisions of the province. Balochistan appointed a private firm, also for three years, to help improve construction management.

SUMMARY OF OUTCOMES

Primary-level enrollments and retention indicators, such as dropout and completion rates, are the measures of achievement of PED's goals. Improvements in the educational systems of both provinces are a consequence of activities undertaken in the four program areas.

NWFP

<i>Primary enrollment</i>	Girls: 34% increase
<i>Boys to girls ratio</i>	2:2 (from 3:6)
<i>Dropout (between Kachi and Pakki classes)</i>	2.6% (from 15%)
<i>Class 3 completion rates</i>	Girls: 81.6% (21.6% increase, from 60%)

Administration and Management

- ◆ Directorate of Primary Education strengthened.
- ◆ Decentralization of planning, budgeting, accountability extended to district and subdistrict levels.
- ◆ Annual growth rate of recurrent, development budgets reached 10% (exceeds PED mandate of 5%).
- ◆ EMIS: computer cells established at provincial, district levels; four school censuses conducted annually; a financial information management system developed, implemented in seven districts; a personnel management system created and being pilot-tested; a computerized teacher training monitoring system developed and installed in the Curriculum Bureau.
- ◆ Private-sector involvement: the Frontier Education Foundation is operational.
- ◆ Service rules changed to address lack of teachers for girls, including lowering academic qualifications for female teacher candidates, relaxing age limits, and hiring retired male teachers, whenever possible.
- ◆ Donor activities coordinated through Directorate of Primary Education.
- ◆ Funding from donors other than USAID obtained.

Curriculum and Instructional Materials Development

- ◆ Studies conducted about Kachi and multigrade environments, resulting in development of instructional materials, including plastic picture blocks for letters and numbers. Textbooks, annotated teacher guides, test items developed for Kachi, Pakki and second grade. Supplementary reading materials prepared for second through fifth grades. Instructional materials focused on students.
- ◆ Teacher support materials, such as alphabet charts, number friezes, and maps developed.
- ◆ Instructional materials development process (development, training, field-testing, revising, production) institutionalized.

- ◆ Instructional Materials Development Cell established and staffed.
- ◆ Interactive radio programs to teach beginning English developed and tested for classes 3 through 5 and introduced into third and fourth grades.
- ◆ Primary curriculum revised, instructional objectives improved to allow for measuring learning outcomes, Kachi afforded official recognition.
- ◆ Accountability of supervisors and teachers, monitoring of learning outcomes, and field-testing of instructional materials for effectiveness introduced into the system.
- ◆ Northwest Educational Assessment Program established to test class 3 and 5 achievement levels.
- ◆ Cooperation between Directorate of Primary Education and the Bureau of Curriculum and Extension exists.
- ◆ Relevant training in other countries provided.

Teacher Supply and Training

- ◆ Percentage of schools with pupil-teacher ratio of fewer than 50 to 1: girls — 85% (20% increase); boys — 91.3% (16.3% increase).
- ◆ Percentage of teachers certified: male — 86.9% (13.9% increase); female — (54% increase).
- ◆ Instructional supervision: materials developed, learning coordinators trained.
- ◆ PTC training: hostels of four existing GCETs extended; three additional GCETs constructed; in-service training to certify primary teachers conducted through long-distance course of the Allama Iqbal Open University; study of teachers' knowledge of content highlighted deficiencies in the system and PTC courses revised accordingly; new materials produced for classroom management, particularly multigrade classrooms.
- ◆ In-service training in Kachi-Pakki instructional materials and generic teaching skills provided to primary teachers and master trainers.
- ◆ Effective teaching practices imbedded in the new textbooks and teacher guides.

Construction

- ◆ Since 1992-93, 60% of the schools built were for girls (includes both provinces).
- ◆ Six new GCETs, close to homes of prospective female teachers, constructed.

BALUCHISTAN

<i>Primary enrollment</i>	Girls: 30% increase; boys: 13%
<i>Boys to girls enrollment ratio</i>	3:4 (from 5:4)
<i>Dropout (between Kachi and Pakki)</i>	27% (remained constant)
<i>Class 3 completion rates</i>	Boys: 8% increase; girls: 11% increase

Administration and Management

- ◆ Directorate of Primary Education established and operational. Post of Additional Director established. Job descriptions for DEOs, SDEOs, ASDEOs, and learning coordinators developed. Field staff, DEOs, and SDEOs trained in budgeting and planning, policy, and performance monitoring procedures.
- ◆ Decentralization of planning, budgeting, accountability to district and subdistrict levels exists.
- ◆ Nearly 18% annual growth rate of recurrent budget and more than 100% of development budget achieved.
- ◆ BEMIS operational; computer cells in at least the central district of each division and in offices of Secretary of Education and deputy secretaries for development and administration. Seven school censuses completed.
- ◆ Financial management information system developed and installed.
- ◆ Private sector involvement: Balochistan Education Foundation established; Habib Bank supporting home schools for girls. Balochistan Girls' Scholarship Program started.
- ◆ Service rules: teacher entry-level qualifications and age limits relaxed to enable more teachers to be hired for girls' schools; rules modified to allow female promotions to senior positions.
- ◆ Community support: Society for Community Support for Primary Education, a not-for-profit NGO, established with funding from multiple sources to assist communities and the government in establishing new girls' schools. Community support process institutionalized.
- ◆ Donor activities coordinated through the Directorate of Primary Education.
- ◆ Funding from donors other than USAID obtained.

Curriculum and Instructional Materials Development

- ◆ Balochistan Instructional Materials Development Cell established and staffed with four subject specialists.
- ◆ Preliteracy materials prepared, field-tested, revised. A total of 8,000 sets distributed; another 8,000 in production.
- ◆ Desktop publishing equipment installed; staff trained in its use for layout and design of instructional materials.
- ◆ Instructional materials development process (that is, development, training, field-testing, revising, production) institutionalized.
- ◆ Sample bidding documents and tender notices prepared to streamline instructional materials publishing.
- ◆ Textbooks and annotated teacher editions developed for Kachi and Pakki.
- ◆ Illustration resource library established, with more than 500 illustrations.
- ◆ Primary curriculum revised, instructional objectives improved so that learning outcomes can be measured; official recognition given to Kachi class.

Teacher Supply and Training

- ◆ Ratio of male teachers to female declined to 5:1 from 6:1.
- ◆ Percent of boys in primary school: 85% (up from 68%); percent of girls: 81% (up from 76%).
- ◆ Backlog of 8,000 untrained primary teachers eliminated through accelerated training program; specialists at Bureau of Curriculum and Extension, secondary teachers, and headmasters of primary schools trained to teach the accelerated course.
- ◆ Percent of male primary teachers certified: 77.6% (from 67%); female teachers, 72% (from 43%).
- ◆ Mobile Female Teacher Training Program developed to increase supply of female teachers in rural areas. To date, 576 girls awarded the PTC as a result of the program.
- ◆ Faculty of Education Program designed to replace the PTC course. Emphasis on classroom realities.

Construction

- ◆ Since 1992-93, 60% of the schools built were for girls (includes both provinces).

SUMMARY OF RECOMMENDATIONS

Administration and Management

- ◆ Implement effective financial management and performance monitoring systems.
- ◆ Institutionalize positive changes, such as community participation in primary school management, and extend the process to all schools.
- ◆ Improve day-to-day management practices at all levels of the Education Department.
- ◆ Establish reliable process for competitive bidding and quality assurance within government offices.
- ◆ Conduct regular, practical, on-the-job training at all levels of management in the primary education system as part of the responsibility of managers within the system.

Curriculum and Instructional Materials

- ◆ Continue support for the IMDCs since they are the only organizations solely concerned with instructional materials issues, with no vested interest.
- ◆ Include financial allocations for the IMDCs as part of the recurrent budget.
- ◆ Continue to include young, primary school teachers and subject specialists from the Bureau of Curriculum and Extension on the IMDC staffs.
- ◆ Continue the cycle of development, training, field-testing, and revising before the adoption and full-scale dissemination of classroom materials.
- ◆ Create a career ladder within the Directorate of Primary Education.

- ◆ Replicate the desktop publishing capabilities in place in Balochistan's IMDC in NWFP.
- ◆ Establish a testing cell within the IMDCs to test student achievement and provide the information to the materials developers.
- ◆ Continue to train and support supervisory staff. Establish lines of accountability across the system.
- ◆ Establish linkages among the schools, supervisors, and training institutions.
- ◆ Continue cooperation and coordination among provinces.
- ◆ Implement improved procurement practices by the Textbook Board.

Teacher Supply and Training

- ◆ Completely revamp the preservice PTC course to make it practical and relevant to the classroom.
- ◆ Develop more training units for the GCETs in subject-content, materials-specific training, practical methods, and classroom management.
- ◆ Connect preservice and in-service programs more closely either by locating both in GCETs or by using GCET instructors for both types of training.
- ◆ Train GCET instructors and field supervisors in content and methodology.
- ◆ Test preservice PTC candidates on their knowledge of subject content at the start and end of each academic year. Do not award PTCs unless proficiency is demonstrated.
- ◆ Create an in-service program for the backlog of "undertrained" teachers.
- ◆ Design more annotated student texts to bridge the gap between theory and practice.
- ◆ Organize a system of accountability to ensure quality learning.
- ◆ Conduct more evaluations in schools of the effects of innovations in the system.
- ◆ Connect in-service training to field supervision productively.
- ◆ Continue to develop more instructional materials adapted to real conditions.
- ◆ Conduct small observational studies in classrooms to determine the types of teacher training required.

Construction

- ◆ In future activities, make a primary issue such as construction management part of the "conditions precedent."
- ◆ Plan construction implementation activities so that a delay in one activity will cause minimum disruption to other activities.
- ◆ For technology transfer, create a distance between the government implementation official and those providing technical assistance.
- ◆ Inform district-level and lower education officials about the construction and maintenance process to enable them to contribute toward planning, monitoring, and maintenance.
- ◆ Develop models for community participation in the construction and maintenance process.

Chapter 1

Background



1. Background

The Primary Education Development (PED) Program was initiated in 1989 in the Northwest Frontier and Balochistan provinces. Its purposes were to increase the enrollment of primary school children, particularly girls, in rural areas and to improve the quality and efficiency of primary education. The problems of primary education identified in these two provinces were common to the rest of the country as well, but their severity in NWFP and Balochistan was of a higher degree than those found in Punjab and Sindh. To understand the nature of the problems and the approach of the PED Program in addressing them, it is necessary to look first at the regions and their inhabitants.

SETTING FOR THE PED PROGRAM

Balochistan, Pakistan's most underdeveloped province, is its largest. With an area of 347,190 square kilometers, it occupies almost half of the country's land mass, yet contains only 5 percent of its population. In 1989, the population of Balochistan was estimated to be approximately 5.5 million, amounting to an average population density of approximately 15 persons per square kilometer. It was sparsely populated. Almost 84 percent of the population resided in rural areas in some 5,000 villages and small towns. The situation differs little today. A widely scattered population and the existence of unpaved roads, limited public transport, and poor communication systems in many areas deter the provision of basic services.

The Northwest Frontier Province, on the other hand, with 102,000 square kilometers, is Pakistan's smallest province. It is more densely inhabited (14 million in 1989), has a far better developed road and transport network, and has greater access to services than does Balochistan. Relative to Punjab and Sindh, NWFP and Balochistan are economically the poorest and industrially the most underdeveloped.

The vastness of Balochistan's size translates itself into long international frontiers with Afghanistan to the North and Iran to the West. The shorter provincial border on the east separates Balochistan from NWFP in the northeast, moving southward toward the Arabian Sea, along Punjab and Sindh. Its geographic characteristics represent the most rugged and arid terrain in Pakistan. It is bounded in the northeast by the Sulaiman mountains, which mark the beginning of a continuous system of barren mountain ranges that extend along the eastern border of Balochistan. These are briefly broken by the flat Kachi Desert that merges into the lower Indus Valley in Sindh. The mountains curve westward in the south, forming the northern boundary of the barren Makran Desert, which reaches along the long coastline of the Arabian Sea to the frontier with Iranian Balochistan. The southwestern area of Balochistan, which constitutes thousands of square kilometers along the borders with Iran and southern Afghanistan, consists of desert plains and basins that are extremely hot and arid in the summer.

Balochistan lies outside the monsoon system on which agriculture elsewhere in Pakistan relies. Therefore, with the exception of its northeastern districts, Balochistan has an exceptionally dry and arid climate with annual rainfall generally not exceeding 15 centimeters. Rains will not come for years on end, but when they do, they come with a ferocity which might well cause serious flooding. Its temperatures swing wildly up and down the scale, as high as 50 degrees centigrade in the south in summer and as low as freezing in the north in winter. Overall, the hostile landscape and weather system preclude the practice of agriculture on any great scale and effectively preclude the setting up of large communities. Balochistan lends itself more to nurturing a largely pastoral society where nomadic tribes go where the grasses are.

NWFP's landscape and climate are far more amenable, thereby leading to extensive and variegated farming in some of its areas. This province is located between Afghanistan on the West and Punjab on the East. The lofty Himalayas, in particular the Hindu Kush mountains, constitute the northern boundary, with Balochistan lying along its southern edge. The Hindu Kush mountains descend into the rich and fertile plains of the Peshawar Valley. Moving south toward Balochistan, one enters the barren desert plains of Dera Ismail Khan.

Ample rainfall in the north and the central plains of NWFP allows for grazing of sheep in the mountainous regions where irrigation is difficult. In the flatter terrain near Peshawar, there is extensive cultivation of a diversity of crops. Understandably, the population concentration is also high. Large villages, towns, and cities cover the landscape. Although the temperature varies widely with changing seasons and landscape, the climate is more predictable, and certainly kinder than that of Balochistan. The human resources, basic infrastructure, and economy of the Northwest Frontier Province is better placed.

Three principal ethnic groups are found in Balochistan: the Baloch, the Pathans, and the Brahui. In NWFP, the Pathans are the predominant ethnic group, along with several smaller ones such as the Hazara, the Kohistani, and the Kalash. Punjabi and Mohajjir (Urdu-speaking immigrants from northern India) settlers are found among the urban populations in these provinces. In Balochistan, the better-educated settlers wield considerable influence given their large presence in the provincial bureaucracy.

The major ethnic groups in both provinces are organized into tribes, with their ethnic and tribal identities playing a far more important role in their lives than either religious or national affiliations. Although there exist differences in the ways power and leadership issues are addressed among different groups, they subscribe to a more or less common tribal code of ethics wherein bravery and male aggressiveness are valued. Revenge in response to any wrong committed against a tribe member is a way of life. The basis of most intertribal feuds is "*zar, zan, and zameen*" (that is, money, woman, or land). The association of tribal honor with the purity of women reduces them to objects of ownership which have to be carefully guarded and hidden from public eye. Hence, when it comes to providing basic services, particularly education, women are more disadvantaged than men. The exceedingly low literacy rates of rural women in

both provinces — less than 4 percent in NWFP and 2 percent in Balochistan — bear testimony to this fact.

In Balochistan, 82 percent of the population speak three main languages: Balochi (36%), Pashto (25%), and Brahui (21%). The remaining speak Sindhi, Siraiki, Hindko, and Punjabi. Only 1.4 percent speak Urdu, Pakistan's national language.

In NWFP, 68 percent of the people speak Pashto, 18 percent Hindko, and 4 percent Siraiki. The rest speak Khowari, Kohistani, and Punjabi among other languages. Only 0.8 percent speak Urdu. Nationally, 24.0 percent of urban households have a working knowledge of Urdu, but in the rural areas only 1.3 percent have this facility.

Among the indigenous languages, Pashto is the most developed. It does not, however, have a widespread written tradition. Consequently, many Pathans do not know how to read and write Pashto, and only a handful of linguistic scholars are literate in Baluchi and Brahui. Hence, Urdu is the only language that teachers — either locals or outsiders — are equipped to teach. Despite the knowledge that early learning is facilitated by the use of children's mother tongue, the only viable medium of instruction is Urdu.

The assertion of ethnic identity, however, has been an important issue. As a result, language has acquired a political role. In 1989, for example, textbooks were published in Urdu, Pashto, Balochi, and Brahui in Balochistan and in Urdu and Pashto in NWFP. Consideration was not given to the fact that teachers were illiterate in these regional languages. Given that primary school enrollments constitute the largest enrollments in the education system — approximately 70 percent — in curriculum, particularly those with political connotations, can result in substantial resistance.

STATE OF PRIMARY EDUCATION

The state of primary education in NWFP and Balochistan in 1989 is best understood when viewed in the context of literacy rate and resource allocations to the education sector. According to the population census in 1981, the national literacy rate for ages ten and above in Pakistan was 26 percent, with 35 percent for males and only 16 percent for females. Figures relevant to literacy in subsequent years were based on extrapolations taking into account a 3 percent population growth rate. The corresponding figures given by the Planning Commission of Pakistan for 1989 were 30.6 percent, 41.6 percent, and 18.6 percent, respectively.

In 1988-89, only 7.82 percent of the total government expenditure was on education. Although this amount represented an increase from 5.0 percent in 1982-83, it amounted to 2.44 percent of the GNP, lower than the 4.0 percent (of the GNP) level recommended by UNESCO for developing countries. Until 1988, primary education (grades 1 through 5) was accorded only 30 percent of this meager educational budget; yet, it represented almost 70 percent of the enrollment

in education. Universal primary education and improvement of literacy rates were laudable goals of educational planning documents, but there was little or no success in achieving these purposes.

An examination of the literacy rates showed inequities that could be categorized as urban-rural, male-female, and provincial. At the national level, urban literacy rates were 30 percent higher than those in rural areas, and male literacy rates exceeded those of females by approximately 20 percent. As shown in Table 1 below, of Pakistan's four provinces, NWFP and Balochistan had the lowest literacy rates: 16.7 percent and 10.3 percent, respectively, compared with 26.2 percent for Pakistan as a whole. Literacy rates for rural women were 3.8 percent in NWFP and only 1.8 percent in rural Balochistan.

Table 1

Literacy Rates for Pakistan and Its Four Provinces For Ages Ten and Above (Based on the 1981 Census)			
	Total	Urban	Rural
Pakistan			
Both Sexes	26.2 %	47.1 %	17.3 %
Male	35.1	55.3	26.2
Female	16.0	37.3	7.3
Balochistan			
Both Sexes	10.3 %	32.2 %	6.2 %
Male	15.2	42.2	9.8
Female	4.3	18.5	1.8
NWFP			
Both Sexes	16.7 %	35.8 %	13.2 %
Male	25.9	47.0	21.7
Female	6.5	21.9	3.8
Sindh			
Both Sexes	31.5 %	50.8 %	15.6 %
Male	39.7	57.8	24.5
Female	21.6	42.2	5.2
Punjab			
Both Sexes	27.4 %	46.7 %	20.0 %
Male	36.8	55.2	29.6
Female	16.8	36.7	9.4

Source: Population Census Organization.

Primary participation rates reflect similar disparities. Except for urban Punjab, participation rates for males were at least 20 percent more than those for females. At the provincial level, NWFP and Balochistan lagged behind the other two provinces. As with literacy rates, the rural female's situation was particularly poor. As shown in Table 2, their status was the worst in Balochistan, with a rural participation of 3 percent.

Table 2

Participation Rates for Primary Education 1983 through 1984 by Gender, Region, and Province		
Province	Urban	Rural
Balochistan		
Male	64.10 %	29.57 %
Female	45.80	3.16
NWFP		
Male	71.80 %	66.00 %
Female	42.00	11.60
Sindh		
Male	76.03 %	54.85 %
Female	57.75	8.92
Punjab		
Male	60.63 %	61.48 %
Female	68.11	30.24

Source: Provincial Bureaus of Education

Participation rates alone, however, did not fully reflect the state of primary education. When combined with dropout rates, the magnitude of the neglect was apparent, and again the same inequities emerge from the data. The nationwide cumulative dropout rate from primary was 50 percent. Less than half of the primary-level population enrolled, and 50 percent dropped out before completing grade five. Most girls dropped out before completing third grade. Table 3 below shows that the highest dropout rate — 93 percent — was for girls in rural Balochistan.

Table 3

Dropout Rates for Primary Education 1983 through 1984 by Gender, Region, and Province		
Province	Urban	Rural
Balochistan		
Both Sexes	60 %	79 %
Male	56	68
Female	80	93
NWFP		
Both Sexes	63 %	71 %
Male	60	70
Female	70	78
Sindh		
Both Sexes	43 %	79 %
Male	40	77
Female	50	89
Punjab		
Both Sexes	18 %	49 %
Male	12	18
Female	24	56

Source: National Education Council, Islamabad.

As noted, primary education accounted for the largest enrollments in the educational system. In 1987, in NWFP and Balochistan respectively, 78 percent and 82 percent of the enrolled school population were primary school students. In NWFP, however, first grade enrollment accounted for 46 percent, while fifth grade enrollment accounted for only 10 percent of the total primary enrollment. Corresponding figures for Balochistan were 50 percent and 7 percent, respectively. The primary enrollment pattern revealed a pyramid structure with the largest fraction of

enrollments concentrated in grade one, tapering off to only a few percent in class five, thereby indicating that most dropouts occurred during the early grades.

Data showed that primary education needed urgent remedial measures to improve access and increase enrollments, to improve quality and reduce dropouts, and to attain both objectives in an equitable manner so that gender and urban-rural disparities could be addressed. The rationale for basing the PED Program in the provinces of NWFP and Balochistan was also apparent. Other considerations were the relatively small size of the population and a provincial bureaucracy in each province that was expected to promote program implementation. Moreover, other donor assistance had been concentrated in the Punjab and Sindh provinces.

UNDERLYING PROBLEMS

This portion of the report lends itself to a discussion of the specific problems that the Primary Education Development Program was to address.

Paucity of primary teachers. The scarcity of teachers, particularly of female teachers in rural areas, was the most important factor responsible for low participation rates. In 1988-89, 25 percent of the primary teachers in NWFP were female, whereas, in Balochistan, only 14 percent were women. Further, an oversupply of teachers existed in the urban areas.

The situation created by the lack of a pool of female teachers in rural areas was particularly bleak in Balochistan, where rural women were not academically qualified to teach. Few middle or high schools for women existed in the rural areas. Taking into account a primary participation rate of 3 percent and a primary dropout rate of 90 percent, an acute shortage was apparent of girls with academic readiness to enter middle schools. In both NWFP and Balochistan provinces, great importance is placed on the chastity of women because tribal honor is closely linked with it. Women working outside the home in a nonfamilial environment are viewed with disapproval. Because Balochistan is the most underdeveloped of the four provinces, it affords few, if any, opportunities for employment. Women are married young, and their role is to procreate and engage in activities within the home to sustain the family. Although the indirect benefits of education, such as nutrition and reduction of exceedingly high infant-mortality rates, may act as a catalyst for increasing female primary enrollment, they still may not encourage an attitudinal change with regard to working outside the home. As a result, local women are unavailable to serve as teachers.

No incentives were available to motivate urban teachers to go into rural areas. When the PED Program was undertaken, few financial incentives were available for teaching in rural areas. The cost of transportation, as well as the difficulty of finding appropriate residential accommodations in villages, served as major disincentives. Additional problems existed for female teachers. Traveling and living unchaperoned in remote villages is socially unacceptable. A male chaperon, such as a father, brother, or uncle, is usually required. In Balochistan, according to some estimates, 90 percent of the female teachers belonged to the group of Mohajir or Punjabi settlers

in the urban areas. They were reluctant to live in rural areas where the indigenous tribes predominate. Given a choice, however, between living among the Baloch or the Pathan, they preferred the relatively more open society of the Baloch. The dual demands of career and family also make it impossible for women to work outside their homes. This situation resulted in high teacher absenteeism, particularly among women. The primary teaching field was not an attractive career option. The low salaries and low status of primary school teachers also discouraged new entrants in this area.

Insufficient number of school buildings. Although schools were observed to operate without buildings, the provision of teachers where school buildings existed encouraged attendance. Both location of the schools and physical plant were also a deterrent to enrollment. The existing number of schools was unable to accommodate the entire primary-level population. The segregated nature of schools — although mixed-gender enrollments existed — was highly skewed in favor of boys. In NWFP of the 13,084 primary schools, 10,108 were male and 2,976 female. In Balochistan, as expected, the disparity was far worse: 5,917 primary schools with only 515 designated for females, that is, one sixth the total number of schools. Moreover, more schools needed to be built in the rural areas. The slow-paced construction of new primary schools by the government was discouraging. According to the Planning Commission of Pakistan, from 1983 through 1987, only 285 primary schools were built in Balochistan and 488 in the more populous NWFP. If enrollment increases were viewed only in terms of school buildings, 11,500 new schools would be required for the two provinces to increase the participation rates for boys to 90 percent and for girls to 60 percent by the year 2000.

Often schools operated without buildings, predominantly in the rural areas. In NWFP, only 238 shelterless schools existed. In Balochistan, however, there were 3,150 shelterless schools; this number constituted 60 percent of the total. Many schools that operated out of buildings were badly maintained, and neither drinking water nor toilet facilities were always provided. In fact, in most girls' schools in Balochistan, no toilets were available. Most schools in the rural areas consisted of two classrooms to serve the needs of grades one through five.

Although problems of overcrowding were characteristic of urban schools as a result of population density, there tended to be an uneven distribution in the rural areas as well. The more populous earlier grades — with approximately 100 students concentrated in the preprimary and grade one levels — were grouped in one classroom, whereas higher grades with only few students were grouped in another, if it existed. Schools also lacked boundary walls which were particularly needed for girls' schools. In addition, there was also a dearth of basic equipment, including blackboards, chalk, and mats for children to sit on.

In the rural areas where children walked to school, long commuting distances were also a deterrent to enrollment. Schools should be within 1.0 to 1.5 kilometer radius of a child's home. Geographical remoteness was a particularly acute problem in Balochistan, given its low population density of approximately 15 persons per square kilometer. In rural areas, it was even less. Data from 1983 showed that only 33 percent of the villages had access to primary schools within one

kilometer. Access to female schools within this distance was limited to 6 percent of the villages. Long commuting distances are a particular disadvantage for girls. Studies conducted in 1988-89 indicated that in the conservative tribal cultures of the two provinces sending girls unchaperoned to distant schools would not be allowed. Moreover, parental perception of their daughter's safety was not limited to distances. They articulated reservations about schools being located in the territory of a rival ethnic group or tribe and in private homes where contact with males outside the family was possible.

Poorly trained teachers. The quality of primary-level teaching was poor, and many teachers were not formally trained. Teacher training courses also needed to be modified to reflect emphasis on classroom instruction. Trainers lacked experience in primary school teaching, and no instructional supervision of teachers existed in schools.

In NWFP, 73 percent of the male teachers and 67 percent of the female teachers had received formal training at a teacher training college and obtained the Primary Teaching Certificate (PTC). The corresponding figures for Balochistan were 32 percent and 43 percent, respectively. There were 6 female Government Colleges for Elementary Teachers (GCETs) and 12 male GCETs in NWFP. In Balochistan, out of six GCETs, only one was for women. As a result, a need existed for building more teacher training colleges distributed evenly in the provinces to increase access.

Courses offered at the training colleges were abstract and mechanical and had little relevance to classroom realities. For instance, there was no recognition of the existence of multigrade classes where all grades were taught by one teacher. Varying teaching strategies are needed for multigrade situations in comparison with single-grade teaching. Moreover, no emphasis was placed on instructional techniques. Many PTC-trained teachers lacked content knowledge of the language of instruction. Teaching, which was textbook centered, emphasized rote memorization of lesson content. Further, students were discouraged from asking questions, and strict discipline was enforced. Finally, PTC courses also needed to be revised.

Most GCET instructors had no experience in primary teaching. They lacked teaching skills and were not motivated to teach, preferring to be secondary school teachers or principals. Career advancement within the primary sector was nonexistent, and there was no reward system to motivate them.

Given the inadequacy of preservice (PTC) training, in-service teacher training was required particularly in Balochistan where, due to the scarcity of teachers in rural areas, preservice training and sufficient academic qualifications were not considered as prerequisites for hiring teachers. In-service training programs, however, were too short and not based on an assessment of primary teacher needs. No program was available to assess the outcome of the training. As with GCET instructors, trainers were seldom experienced primary teachers. The provincial Curriculum Bureau responsible for in-service training through its extension services' program was inadequately staffed and budgeted for the task.

Little, if any, instructional supervision was provided to primary teachers. Supervision was limited to administrative issues and at best inspection of classes to check on student discipline and attendance. Few supervisors had adequate teaching experience at the primary level. Further, visits to schools were far less frequent than required because of problems of transportation and a preoccupation with logistical and personnel matters.

Need for curriculum and instructional materials reform. The primary-level curriculum and textbooks were too difficult and demanding for early learning. The rapid decline in enrollments beyond the early grades was a visible indicator. In addition, no supplementary material existed to assist teachers with instruction. Curriculum developers at the federal Curriculum Wing and the provincial curriculum bureaus were subject specialists, many of whom were highly knowledgeable about their disciplines but lacked an understanding of primary-level curriculum needs. Few had any primary school teaching experience. The emphasis of the curriculum was on content knowledge, with little regard for the cognitive levels of children. A reorientation of the curriculum based on the psychology of human learning and child development was necessary. A child-centered approach with emphasis on skill development was needed. The primary curriculum, with its focus on subject proficiency, was too difficult for early learning.

Language requirements in the curriculum were also too demanding for a primary-level child. In both NWFP and Balochistan, the medium of instruction was the predominant regional language. Hindko and Pushto were the main languages in the NWFP, whereas in Balochistan, Balochi, Pushto, and Brahui were spoken. In certain areas, however, there was a variation in dialect of the predominant language and pockets where a different language altogether was spoken. Hence, being taught in the regional language was not without problems, particularly as it related to early learning. Primary children were also required to learn Urdu, the national language, which was spoken in fewer than 8 percent of the households in Pakistan. Arabic, the language of the Quran, and English were part of the curriculum.

The large preprimary group known as Kachi was never considered a separate entity from first grade (Pakki). Therefore, a separate curriculum for these beginners did not exist. A difficult and demanding curriculum, as well as instructional materials, led to high primary dropout rates in the early years. Although an integrated curriculum was adopted by both provinces and was used in grade one during the 1989 school year, thereby replacing teaching of subjects separately, textbooks reflected the content knowledge approach of the curriculum. No simple sequential approach was made to take pupils gradually from simple to more complex concepts and to help them learn pattern recognition easily. There was also a lack of activity-oriented content which would have encouraged children to explore their environment. Textbooks were difficult to comprehend and precluded independent learning. The physical quality of the textbooks was poor as well and, therefore, required replacement at least once during the school year. Neither annotated teachers' editions of the textbooks nor teachers' guides for each subject and grade existed. Also lacking were there support materials, such as alphabet cards, number cards, wall charts of science processes, other nontextbook learning materials, and supplementary reading matter.

Need for field-based observation and evaluation. No system of field-based observation and evaluation existed that would have provided necessary input for improving the quality of education. Provincial textbook boards that have a monopoly over the production of textbooks did not try out their material in schools during or after textbook development. In the absence of field-testing, the personal opinion of the author or a few experts determined the efficacy of instructional material. There was in fact no form of achievement testing to determine whether students had accomplished the learning objectives. Promotion from Kachi through grade five was a decision largely left to the discretion of either the teacher or the head teacher. Designing of curricula, textbooks, and instructional techniques was not based on empirical observations.

Poor management of primary education. Policy planning and decision-making were not based on research and analysis of problem areas and use of reliable data. Educational managers lacked interest and motivation. Instructional supervision was completely neglected. Primary education was managed by the Directorate of Schools in both NWFP and Balochistan provinces. Middle — and secondary — level education also came within the purview of the provincial directorates. In terms of resource allocation, primary education had been grossly neglected at the expense of the other subsectors. Construction of primary schools, teacher training, curriculum development, and instructional material required a different approach than did middle and secondary levels. Educational managers, particularly at the grass-roots level where supervision was crucial, tended to concentrate on the secondary and middle tiers of school education.

The civil service was rigidly hierarchical and, therefore, discouraged openness to innovative procedures. This situation was exacerbated by tedious procedural and documentation requirements before any program could be implemented. Decision-making, therefore, took place at the "top" among the middle- and lower-level officials. There was considerable reluctance to assume responsibility for matters lying within their purview. Moreover, a tight fiscal control over resource allocation inhibited expenditures required to implement development projects. The trade-offs were inefficiency and a lack of motivation.

There was no separate primary education cadre. Primary officials were promoted to posts in the secondary subsector. This approach resulted in a clear disincentive to improve their skills and professional performance in the field of primary education. Given the tradition of top-down control and gender disparity in favor of males at all levels of the primary system (that is primary students, teachers, supervisors, and facilities), there were few women in senior management positions to participate in and influence decision-making. A marked decline was apparent in the caliber of administrators from the upper echelons to the grass-roots level where delivery of education takes place, that is, in the classroom. Instructional supervision is the major casualty. All officials from the district education officers (DEOs) to subdistrict education officers (SDEOs) to learning coordinators (LCs) and headmasters coming in direct contact with schools were unaware of, or neglected, the instructional aspect of supervision.

Successful policy planning, resource allocation, and decision-making needed to be based on the collection of accurate, reliable, and timely educational data. Although the federal and provincial

governments had a system of data collection and reporting, it lacked uniformity and the means of determining the reliability and validity of the data. Hand tabulation of data at district levels led to cumulative errors. Further, there was no tradition of research and analysis preceding decision-making at all levels of educational management.

Communities donated land for schools in their areas. A need existed, however, for community involvement in operating and maintaining primary schools. A primary issue was accountability. The community needed to intervene to ensure that education needs were being met.

PROGRAM GOALS

According to the summary program description provided in the Program Assistance Approval Document (dated June 1989):

"The broad sector goal of the PED Program is to strengthen the institutional capacity of the Northwest Frontier and Balochistan provinces to formulate and implement equitable policy that improves access to primary education and its quality... This program will bring about substantial increases in literacy for these two provinces over the next ten years. Increased literacy rates are known to contribute significantly to increased and more widely distributed incomes, enhanced agricultural production, better health, lower fertility, and general social and economic development.

The more immediate objective of the Government of Pakistan (GOP) program is to increase access to primary education (grades 1 through 5) and improve the equity, quality and efficiency in the sector. Regarding enrollments, primary school students will double over the next ten years, increasing from approximately 1.5 million students in 1989 to approximately 3 million in 1999. Girls' enrollments will triple to a targeted 228 percent,* significantly reducing current gender inequities in these two provinces. The rate of boys' enrollments will increase by a targeted 48 percent during this time. Girls' enrollments will increase by 70 percent of the girls in Northwest Frontier Province and 35 percent of the girls in Balochistan. System efficiency will increase throughout and the quality of education will be raised for all of the provinces' 3 million students."

* The original figures cited for percentage increase in student enrollment in the PAAD were 198 percent for girls and 76 percent for boys. These numbers were subsequently altered as more accurate data became available.

Table 4

PED Program Enrollment Targets 1990 through 1999							
Province	Enrollments				Participation Rates		
	Years		Increase		Years		Increase
	1989	1999	Number	%	1989	1999	%
Balochistan							
Boys	301,000	564,000	263,000	87.4	60.1	93.6	33.5
Girls	58,000	193,000	135,000	232.8	12.3	35.8	23.5
N.W.F.P.							
Boys	1,040,000	1,422,000	382,000	36.7	83.7	99.0	15.3
Girls	290,000	951,000	661,000	227.9	25.2	70.0	44.8
Both							
Boys	1,341,000	1,986,000	645,000	48.1	76.9	97.4	20.5
Girls	348,000	1,144,000	796,000	228.7	21.5	60.3	38.8
Total	1,689,000	3,130,000	1,441,000	85.3	50.2	79.5	29.3

Source: Purpose Level Monitoring Data.

MODE OF FUNDING

To bring about change that was sustainable beyond the life of the program, a mode of funding was employed whereby the \$280 million grant for the PED effort was divided into two components: a \$240 million sector grant given by A.I.D. to GOP directly for implementing the program and a \$40 million technical assistance and training grant administered by A.I.D. directly to promote implementation and strengthen institutional change within the governments of NWFP and Balochistan.

The \$240 million sector grant was to be released to the two provincial governments in annual tranches of \$24 million based on the establishment of mutually agreed upon annual policy and action benchmarks and the performance of the Government of Pakistan and the provinces in meeting these benchmarks. The initial Program Agreement entered into by the GOP and the United States, acting through A.I.D, included conditions and covenants that had to be honored by the GOP and provincial governments of NWFP and Balochistan before disbursement of the initial and subsequent tranches of the sector grant could be made.

The initial conditions that related to mutually negotiated annual policy and action benchmarks were as follows:

- ◆ Written evidence that Northwest Frontier and Balochistan provinces have established steering committees composed of, at least, the secretaries of education, planning and development, and finance empowered to negotiate annual action and policy and performance benchmarks with A.I.D. and to conduct semiannual evaluations of progress. (Condition prior to initial disbursement of sector grant)
- ◆ Written, agreed-upon benchmarks and a work plan from both the Northwest Frontier and Balochistan provinces, including a plan of activities and budget to achieve the agreed-upon policy and action benchmarks for the first year of the program. (Condition prior to initial disbursement of sector grant)
- ◆ Written evidence of performance in meeting policy and action benchmarks for the prior year as agreed upon with A.I.D. (Condition prior to each subsequent disbursement of sector grant)
- ◆ A written plan for the subsequent year of the program which shall include action and policy objectives and benchmarks as agreed upon with A.I.D. (Condition prior to each subsequent disbursement of sector grant)
- ◆ Review of progress in program: That, unless otherwise agreed to in writing by A.I.D., reviews of progress of agreed-upon policy and action benchmarks shall be conducted in a timely fashion twice each year. In accordance with the program description, such reviews are to be conducted as a precondition to execution of an amendment to the program agreement making available the subsequent tranche of U.S. dollar assistance as a sector assistance grant. (Covenant in the initial Program Agreement)

The initial conditions that related to policy and institutional changes in the two provinces were as follows:

- ◆ Documentation satisfactory to A.I.D. that for each subsequent fiscal year, total budget allocations, both development and recurrent, over the previous fiscal year for primary education in the Northwest Frontier Province have been increased by at least 5 percent in real terms; and for Balochistan have been increased by at least 8 percent in real terms... (Condition prior to each subsequent disbursement of sector grant)
- ◆ Directorate of Primary Education — Northwest Frontier Province: That, within one year of the signing of the Program Agreement and in a form and substance satisfactory to A.I.D., the Department of Education of the Northwest Frontier

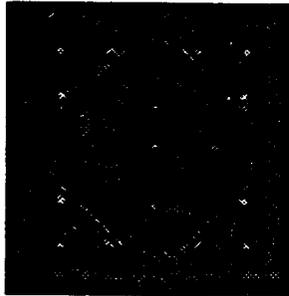
Province shall establish an administratively separate Directorate of Primary Education. (Covenant in the initial Program Agreement).

- ◆ Directorate of Primary Education — Balochistan: That, within one year of the Program Agreement, and, in a form and substance satisfactory to A.I.D., the Department of Education of Balochistan Province shall establish a Deputy Director for Primary Education and thereafter establish at an appropriate time, an administratively separate Directorate of Primary Education. (Covenant in the initial Program Agreement)
- ◆ Promotion of Female Employees: That, both provinces develop, as part of the PED annual plan, a schedule for training female employees to assume senior policy and decision-making positions at the provincial level. (Covenant in the initial Program Agreement)
- ◆ Participant Utilization: That, the Grantee shall ensure that all participants receiving long-term training under this program will continue working in primary education related activities within Pakistan from the date of completion of training for a period of time equivalent to three times the training provided, but not less than one year and not more than five years. (Covenant in the initial Program Agreement)

These initial agreements established a framework within which program intervention was to take place.

Chapter 2

Objectives of the Project



2. Objectives of the Project

In the Northwest Frontier and Balochistan provinces, the Primary Education Development Program was designed to accomplish three specific goals. These were to:

- ◆ **Increase the access to primary schooling**, thereby expanding enrollment to meet agreed-upon targets in both provinces.
- ◆ **Improve the quality and efficiency of primary schooling**, thereby increasing academic achievement and reducing the high dropout rate.
- ◆ **Promote equity by improving the primary schooling of girls in rural areas.**

Continuing the improvement of access to, and the quality of, primary education in an equitable and efficient manner required an educational system capable of solving its own problems in a systematic and scientific way, with emphasis on finding better and improved solutions over time. Program intervention was thus directed toward institutionalizing a process of continuous self-improvement within the educational system.

That process consisted of the following steps:

- ◆ ***Solution-oriented research:*** Identifying solutions, whenever possible and relying on empirical evidence to determine whether the solutions were possible
- ◆ ***Plan of action:*** Translating the proposed solution into a plan of action, including a statement of objectives to be accomplished and the instrumental activities required to achieve the objectives
- ◆ ***Supporting structures:*** Developing the materials, structures, training, courses, and mechanisms to support implementation of the solutions
- ◆ ***Trial testing:*** Testing elements of the solution in a limited trial to determine whether it produced the desired results
- ◆ ***Improvement of the innovation:*** Modifying weak or nonproductive elements of the solution and retesting them
- ◆ ***Wider distribution:*** Trying the improved elements on a broader scale
- ◆ ***Continuous improvement:*** Continuing to test and modify or experiment with other innovations that might produce even better results.

The entire approach of the program was based on this process. An intensive study of the problems of primary education in the two provinces suggested that the first step toward finding sustainable solutions and attaining specific program goals was the setting up of separate directorates of primary education in NWFP and Balochistan supported by annual increases in financial resources allocated to, and expended on, primary education.

Bifurcating the Directorate of Schools, which had hitherto been responsible for education from grade 1 through grade 12 and establishing a separate Directorate of Primary Education, implied that attention and resources — both human and financial — could be concentrated on the specific development needs of primary education. It was recognized at that stage that given the different levels of development and readiness in the two provinces, activities undertaken to attain program goals would not always be simultaneous and implementation strategies would differ. Program objectives would, however, remain the same. Therefore, for example, the Directorate of Primary Education in NWFP was established in June 1990 and became operational on January 1, 1991. In Balochistan, the Directorate became operational some three years later, in 1993.

Improving access to primary education has required:

- ◆ Accelerating the pace of school construction and ensuring that schools were built in close proximity to children's homes so that five-year olds could safely walk to school
- ◆ Increasing the number of teachers, especially female teachers, to meet the needs of a rapidly growing primary-level population.

Increasing quality and efficiency has required:

- ◆ Developing the Annual School Census in each province, as well as of the Northwest Educational Assessment Program (NEAP), to measure pupil achievement in science, mathematics, and their language of instruction at the critical levels of grades three and five. This assessment, which is conducted annually on a representative sample of pupils, serves as a diagnostic tool whose results are then used to design remedial measures to improve instruction in those districts where instructional and learning weaknesses are found
- ◆ Ensuring that major elements of the instructional program — curriculum, instructional materials, teacher training, supervision, and administration — are analyzed and redesigned so that each contributes directly to the learning outcomes intended by educators.

- ◆ Ensuring that when test results indicate that these outcomes are not being achieved at a satisfactory level the elements are reanalyzed to determine where the problems lie. Modifications are then made and tested until there is objective evidence that they work as intended.

Increasing equity has required:

- ◆ Enlarging the number of schools for girls and increasing the number of schools in rural areas
- ◆ Increasing the supply of female teachers in rural areas
- ◆ Ensuring that the quality of instructional programs for girls parallels that of boys.

To achieve the foregoing objectives in an efficient and systematic manner, the PED Program was divided into four components: (1) Administration and Management; (2) Construction; (3) Teacher Supply and Training; and (4) Curriculum and Instructional Materials Development. The entire program was driven by a ten-year target of tripling female enrollment and doubling the enrollment of boys. Targets were then set for each year based on the enrollment needed to reach the ten-year target and modified by the accomplishment of the previous year.

All of the program elements needed to accomplish annual goals were contained in an annual work plan, which set targets for the year and described the requisite activities. These activities necessarily involve:

- ◆ Constructing an appropriate number of schools
- ◆ Increasing the supply of teachers and the quality of their training
- ◆ Enhancing classroom instruction through better in-service teacher and supervisor training
- ◆ Designing, developing, testing, revising, and finally introducing better instructional materials and methods in classrooms
- ◆ Measuring the results of these interventions and revising them, as necessary, to achieve the intended results.

Activities within the administration and management component were designed not only to increase management and administrative knowledge and skills in the Directorate and its field offices but also to coordinate and direct the activities belonging to the remaining three components. These enabling activities were based on a series of studies that were designed to

pinpoint opportunities for improving primary education and strategies for enhancing the educational situation. The most essential of these activities included:

- ◆ Organizational studies of how to bifurcate the Directorate of Schools in the two provinces and develop the organizational structure for the directorates of primary education (DPE). The studies recommended the organizational structure of the new directorates and their field offices. This plan of organization included descriptions of specific roles, functions, and recruitment requirements for positions in the directorate, staff development plans, and incentives for meritorious performance.
- ◆ The human resource survey to collect information on the status and prospects of primary education in the villages of both provinces. The findings focused on:
 - location and access of each village to basic services, such as paved roads, electricity, water supply, basic health units, and public transportation
 - parental and community attitudes and support for primary education for both males and females
 - presence of schools — primary, middle, and secondary — by gender
 - status of teacher supply, in particular, the availability of primary teachers by gender
 - the percentage of local teachers and residential status of nonlocal teachers, that is, whether they commute or reside in the village.

Because the program goals were to improve access to, and the quality of, female primary education, the survey also assessed the potential for increasing the number of local female teachers in the future and for using alternative strategies, such as mixed-gender schooling, with acceptable male teachers where female teachers were unavailable.

- ◆ A study of the problems of teaching Kachi children (the equivalent of kindergarten, though often labeled "junior first grade" in NWFP). Kachi was not officially recognized formally in the Pakistan course of studies for primary education and, therefore, the Textbook Board had not produced any instructional materials other than an Urdu alphabet book. No teachers had been trained to instruct them or assigned the task once in school; yet, on average they constituted 23 percent of the school population in NWFP. The study yielded information about the conditions and practices in Kachi grades, which acted as the basis for developing instructional materials for them and improving in-service teacher training.

- ◆ A study of the problems teachers face in multigrade teaching. The conventional training for the Primary Teaching Certificate (PTC) in the Government Colleges of Elementary Teaching (GCET) did not include teaching the teacher trainees how to approach multigrade teaching despite the fact that most primary schools have two rooms in which to teach five grades (more than 80 percent). Hence, multigrade teaching was the norm.
- ◆ In NWFP, a study of content knowledge of PTC trainees and serving primary teachers. An assessment was made of the content knowledge of the entering teacher training students in the mathematics, science, and Urdu taught in fifth grade. At the end of their training, trainees were given a posttest to determine what gains had been made in content knowledge during their one year in teacher training.

A companion study of the content knowledge in math and science for grade five was made of teachers currently in service to determine the degree to which their knowledge in these two important subjects might indicate the need for remediation and provided grist for developing in-service training courses and materials.
- ◆ A study conducted by a BRIDGES researcher of what teaching practices successful Pakistani teachers used that enabled their pupils to score almost twice as well on achievement tests in mathematics, science, and Urdu as did students of less successful teachers.
- ◆ Organizational studies of the curriculum bureaus in the two provinces to examine structure, operations, objectives, staffing patterns, and qualifications in relation to improving primary school curriculum and in-service teacher training carried out by the bureaus. In NWFP, the Curriculum Bureau is located in Abbottabad, some 180 kilometers from the capital city (Peshawar), where the Directorate of Primary Education (DPE) and the Textbook Board are located. In NWFP, the study recommended establishing a branch office of the Bureau in Peshawar so that staff of the DPE, Textbook Board, and Curriculum Bureau could work together on a daily basis.
- ◆ A similar organizational study of the provincial textbook boards to improve the efficiency and quality of editorial production and distribution functions.
- ◆ A study and compilation of all rules and regulations concerning personnel — posting, transfer, service rules, and so forth.
- ◆ Studies of the functioning of directorate staff in which the staff analyzed their responsibilities and used them to prepare their own job descriptions.

ACCESS

Setting up schools and supplying teachers does not guarantee increases in enrollment. Economic returns, improved health indicators, and reduced fertility rates that are cited as consequences of an increasingly literate population underscore the importance of primary education for government planners. These long-term benefits, however, may not figure prominently in a family's decision to send a girl to school and do not of themselves result in a popular demand for primary education.

In a country such as Pakistan, where most primary-age children contribute to the family income or are engaged in household tasks, some parents may see little utility in sending their children to school. Social and cultural attitudes can also influence the decision of parents regarding schooling, particularly where girls are concerned. Moreover, unlike developed urban areas, remote rural areas have not had long-term exposure to the benefits of education. Therefore, conventional wisdom expressed by government planners stressed that there would be little demand in rural areas for primary education, especially for girls.

The findings of the human resource survey were a surprise to many and contradicted conventional expectations. There was actually a high demand for primary education in rural areas and particularly for girls' schools. Many parents were even willing to send girls to schools with male teachers, contrary to the impression that a completely segregated school system would be the only acceptable schooling situation for rural mothers. In fact, mixed-gender enrollment existed in the majority of boys' schools. Because of an anomaly in the previous school censuses, the fact of the existence of a relatively large girls' enrollment in boys' schools had not been officially reported. For unknown reasons, all of the pupils enrolled in schools with the label "boys' school" were reported to be boys and vice versa, even though it was obviously not the case.

Results of the human resource survey revealed that a number of options would be acceptable to parents and might serve to increase girls' enrollment. Among these choices were sending girls to mixed-gender schools or having retired male teachers or other retired professional men (such as military officers, Pesh Imams of local mosques, or younger trusted male members of the same tribe or tribal subdivision) serve as teachers where female teachers were unavailable. For many, an additional and essential condition for sending girls to school was the proximity of the school. It should be located in the same ethnic, subtribal neighborhood and within safe walking distance. Once these conditions were met, social resistance to girls' schooling no longer played a dominant role. Hence, enrollment targets could be met provided sufficient teachers and schools existed.

In both NWFP and Balochistan, a need existed to increase school construction and teacher supply to meet enrollment targets. As indicated earlier, however, NWFP was more developed than Balochistan and thus had more facilities and a supply of potential teacher trainees that exceeded demand. In NWFP, there were long waiting lists of candidates seeking admission to government teacher training colleges. A substantial number of the male candidates in this pool of potential trainees had 12 to 14 years of formal education, well beyond the minimum required for entrance

to primary teacher training, which was graduation from the tenth grade. The problem in NWFP was finding enough female teachers who were willing and able to serve in rural areas.

In Balochistan, there was a severe shortage of teachers, and candidates lacked the minimum qualifications. The practice in this province was to hire untrained teachers (matric-qualified wherever possible) and train them after several years of teaching. This approach resulted in a huge backlog of untrained teachers. Most women teachers were settlers from other areas of Pakistan and lived in urban areas. Social constraints on women to travel and live by themselves, on their own; the extremely remote nature of villages in rural Balochistan; and differences in language, norms, and culture were strong disincentives for urban female teachers to go to accept posts in rural areas. School facilities in Balochistan also required greater attention than those in NWFP. A total of 60 percent of the primary schools in Balochistan were unsheltered.

ENHANCING TEACHER SUPPLY

To enhance the supply of teachers, particularly female instructors in rural areas, the governments of NWFP and Balochistan were responsible for:

- ◆ Building teacher training colleges — Government Colleges for Elementary Teachers (GCETs) in NWFP and Colleges for Elementary Teachers (CEEs) in Balochistan — provincewide to promote access particularly for local female entrants.
- ◆ Extending existing GCETs to accommodate more trainees, in particular, building more hostel space in female GCETs, thereby doubling their capacity. Consideration was given to training colleges where applicants exceeded capacity.
- ◆ Changing service rules in disadvantaged areas where the number of middle- and secondary-level female graduates was either small or nonexistent. The changes included:
 - lowering the qualifications for primary school teachers so that girls who had passed eighth grade could be trained as teachers
 - removing the age limit on employment so that female teachers could reenter teaching after a long break (for example, after raising their families)
 - allowing retired male instructors to teach girls in those communities that accept the idea.
- ◆ Upgrading girls' primary schools to middle schools where middle-school opportunities were nonexistent and where fifth grade enrollment is enough to justify the higher level. In time, this approach would create potential candidates

for local female teachers because the ability to attend these newly upgraded middle schools enabled girls to go on to high school and to attain the minimum qualification to enter teacher training.

- ◆ Starting a Community Support Program in rural areas by setting up village education committees that provided local female candidates for teachers as well as pupils. Given the shortage of rural female teachers, especially in Balochistan, the importance and need to develop a local pool of female teachers could not be overemphasized.
- ◆ Creating a female Mobile Teacher Training Program to provide training to the young village women in these local pools so that schools could be started in their villages.

IMPROVED FACILITIES

In NWFP, a minimum of 60 percent of all new schools built were for females. In areas where mixed-gender enrollment was acceptable to communities, schools were built without a gender designation. This plan would ease the problem of teacher supply. Site-selection criteria mandated that a certain minimum school-age population existed within what would be the school catchment area. The land had to be provided free, the site had to be suitable for building, and primary schools had to be constructed within a 1.5 kilometer radius of the primary-level population so that five-year olds could easily walk to school. In NWFP, district development advisory committees (DDACs), chaired by a Member of the Provincial Assembly (MPA), give the final approval for school locations. More often than not in the past they have honored requests made by district MPAs to select certain sites.

In some areas, this strategy has led to the clustering of schools with a capacity far exceeding the needs of the primary-level population or building a school at a considerable walking distance from children's homes and using it for entirely different purposes, such as a stable. To reduce such political manipulation of the site-selection process, district education boards (DEBs) were set up with the District Commissioner or Assistant Commissioner as Chairman of the Board. The DEBs were given the authority for the final approval of school sites and for relaxing the school-age population criterion, as warranted. For example, there were villages with a population of 200 families or less which needed primary schools but with a primary-age population less than the 80, five- to nine-year olds required to satisfy that criterion.

Another measure taken to help rationalize school-site selection in NWFP was the rule issued that at a minimum, 50 percent of the schools (to be raised later to 100 percent) would be built on the basis of need. That is, the DDACs would be presented with a panel of village names where EMIS data indicated that one or more schools were needed. They were to select from that panel.

School maps were prepared to provide each district in the province with an updated map showing the location of each village. An acetate overlay was then prepared showing the location of all existing schools. In addition, a list of all the villages without schools and their approximate school-age population is provided with the map for each district. These data can then be used to prepare the panel of villages from which the DDACs are to select school sites.

A detailed physical condition survey of all existing primary schools in NWFP is being completed. This information on the location, condition, need for repair and rehabilitation of facilities, along with a five-year repair and rehabilitation schedule for schools in each *tehsil*, will augment the school mapping data. Repairing and rehabilitating existing schools included reconstructing derelict primary schools; providing buildings for shelterless schools; constructing additional classrooms to reduce overcrowding and increase capacity; and building boundary walls and toilets, particularly for girls' schools, to create a secure environment with the provision of basic facilities so that children do not have to take long breaks during instruction time.

In Balochistan, a new school design for multigrade classrooms has been accepted and is in use. With two teachers per school in NWFP and usually only one in Balochistan, in the rural areas, multigrade teaching is the norm. Multigrade classrooms were designed to maximize student-teacher interaction but enabled each grade to remain a separate entity.

ALTERNATIVE STRATEGIES

Mosque schools — government schools located on Mosque premises — have been operating for a long time in NWFP. The government provides a trained teacher and simple equipment for the school and a small stipend to the Pesh Imam of the Mosque, who also usually offers religious instruction to the children. Originally intended for grades one through three, many later added grades four and five when they found no seats available in their governmental schools for their third grade graduates. Many mosque schools had female pupils as well, presumably because the mosque was perceived as a safe environment. Mosque schools, therefore, had three attractive features: mosques were widespread, with at least one in every village; the costs of constructing a school building could be avoided; school operating costs were reduced because only one teacher is employed; and opportunities existed for increasing girls' enrollment.

In low-income urban areas, many children do not go to school primarily because they are contributing to the family earnings by working. Schools run by individuals in their homes in the same neighborhood presented a viable solution. School timing was flexible and could easily be adjusted to meet the childrens' schedules. Because most teachers are young women, parents are concerned that they be in an environment they considered secure. These home schools have often received additional funds from the private sector. *Mohalla* schools were similar to home schools, except that they were the result of a collective initiative of several parents in the neighborhood instead of a single individual. The school in this case was in the home of one of the parents. The teacher was a young woman from the neighborhood who had a tenth-grade education. Efforts

would be made to train the teachers in these schools and establish procedures by which these schools could be registered as private schools so that children received credit for their education.

Rural communities wishing to start their own school through the Community Support Program in Balochistan also provide housing for a primary school. Often these are rooms in a home. In Balochistan, the government-community partnership has the government providing training and paying the salary for the teacher in the village community school and a commitment to construct a school building after a few years of successful operation. The Village Education Committee, responsible for starting and supervising the school, is composed of the parents of the children in the school. These committees would be responsible for providing and maintaining school buildings and equipment and also have a supervisory role, that is, verifying teacher absenteeism and ensuring that their children's learning requirements are being met.

EQUITY

Gender and urban-rural disparities were manifest in access, quality, and the management of primary education. Given the underdevelopment and geographical remoteness of rural areas, particularly in Balochistan, provision of basic services (including primary education) posed a major problem. Rural backwardness, combined with gender inequity, implied that rural females were the most disadvantaged group.

As in the case of access, the benefits of female education, such as reduced fertility rates and improved nutrition and health care of the family do not have an immediate impact. In the tribal, rural environment of both NWFP and Balochistan, women lead a rather cloistered existence and rarely work for a living. Their activities are restricted to the private sphere of the family, and their security and "sanctity" has to be considered if they venture outside their homes. Even if girls are sent to school, they leave before attaining puberty. Many drop out in the third grade. In certain areas, such as the Makran Region in Balochistan, where a large proportion of the men have worked in the Middle East, exposure to education has created a demand for female education. Sustained efforts by the government, with community support to create opportunities for female education, will gradually increase awareness and demand. In fact, as the human resource survey indicated, an unacknowledged demand for female education already existed in both provinces.

Increasing enrollment alone, however, is meaningless unless children, and girls in particular, can stay in school. Almost 50 percent of the students dropped out before reaching fifth grade. The dropout rate for girls was higher — more than 80 percent in the rural areas in the two provinces prior to program intervention. Apart from social considerations, low teacher quality, corporal punishment for the infraction of rules, inadequate facilities, and pupil boredom with a lackluster program have been reported as the major causes of the high dropout rate.

Math, science, and language achievement tests were administered to students of grades three and five in NWFP revealed that all other things being equal (that is, facilities, equipment, and

instructional material), on average, rural girls perform considerably less well than boys in both math and science. A variety of explanations are offered as the cause(s) of this deplorable condition, but the fact remains that girls did less well, significantly so, on the tests.

In NWFP, women were fairly well represented in the administration. Six out of 17 top posts in the Directorate of Primary Education were occupied by women. At the district level, two parallel administration systems existed for managing primary education of either sex. The female side had the same authority as the male side. This was not the case in Balochistan. Women did not occupy senior management positions, and even in the field offices women were subordinate to men.

REDUCING INEQUITIES

Reducing inequities through access to educational opportunities was the primary activity. As mentioned, 60 percent of the schools to be constructed in NWFP were to be for females in rural areas. Community support programs would also focus on providing schools and teachers for female pupils. The problem of rural teacher supply, particularly of females, would also be addressed in a variety of ways proposed in the previous section, namely, financial incentives, service rule changes, and the provision of more training facilities.

ENSURING QUALITY OF GIRLS' INSTRUCTIONAL PROGRAM

In-service training of female teachers specifically addressed areas of weakness. In NWFP, it was mandated that English be taught in primary schools; yet, few teachers had more than a cursory knowledge of English, and the textbooks available were too difficult for them to use. Therefore, a pilot Interactive Radio Instruction (IRI) program was introduced in NWFP to teach English to teachers and pupils simultaneously as an effective way to address this instructional deficiency. If this program were to prove successful, the plan was to apply the same strategy for teaching math and science.

Science and math are two subjects in which female teachers, and consequently female pupils, are more deficient than their male counterparts. The IRI program provides a standard of instruction for all pupils who participate, regardless of their gender or that of their teacher; all instructional support in terms of content and methodology is also provided. Female teachers who were less mobile than male teachers thus have the same opportunity to learn as male teachers — instruction and training is delivered to both on the spot, that is, in their schools. This is also a convenient cost-effective way to access rural areas. A curriculum was also designed for preservice PTC courses that remedied the deficiencies in content knowledge, particularly of female teachers.

REMOVING GENDER DISPARITIES IN ADMINISTRATION

Balochistan changed its service rules to enable the promotion of women to senior policy- and decision-making positions. Separate field offices for male and females also were established, thereby giving women equal authority and autonomy in managing education at the district level.

In NWFP, the knowledge of the growing acceptability of co-education at the primary level has led to plans to remove gender labels from existing schools and new schools to be constructed. Integrating the education management structure at the district level is the next step and is believed to be a cost-effective strategy. It is intended that females be appointed to manage these schools. This approach may result in greater female representation in school management in NWFP.

In Balochistan, however, it is unclear whether a strategy such as this will be possible for some time yet. Perceptions are that men would be the principal beneficiaries of this new system were it to be adopted. Balochistan Province favors separate gender-related and parallel field offices. In Balochistan, more so than in NWFP, men had been preferentially selected for training courses and study tours abroad compared to women. This gender-biased approach has been corrected.

QUALITY AND EFFICIENCY

Overall, high dropout rates and low achievement levels implied that the quality and efficiency of primary education as a whole needed attention. The teacher is thought to be the most important determinant of student performance. Studies showed that pupils of those teachers who were proficient in content knowledge of primary-level subjects performed better on achievement tests. The BRIDGES' study of the determinants of schooling effectiveness in a large sample of schools through out Pakistan found that the only direct teacher correlate affecting student performance was the extent of a teacher's formal schooling, rather than teacher training.

Courses at teacher training colleges were theoretical in nature and far removed from classroom realities. No emphasis was placed on the practical aspects of classroom instruction and no mention was made of teaching multigrade classes. As mentioned in Chapter 1, most trainers had no experience with primary-level teaching.

Teachers' classroom resources consisted of a poor quality blackboard and textbooks. Annotated guides to textbooks and supplementary teaching aids did not exist. Typically, six to ten subjects were taught during the day to two to three different grades in the same classroom.

Teachers, consequently, had no time available for preparing and planning lessons and grading homework or tests. They used the textbook to pace the lessons during the school year regardless of varying student abilities. Rote memorization of lessons, with little understanding of content, was the rule rather than the exception in learning. Unfortunately, the textbooks were also difficult and too demanding for efficient learning. Added to this was the requirement that pupils begin

learning at least one, and sometimes two, additional languages apart from their mother tongue in first grade. Instructional supervision of teachers was a neglected area. Learning coordinators (LCs), who were supposed to be trained for the task, spent more time addressing administrative and logistical matters.

A primary feature of any efficient, self-correcting educational system is testing. Assessing achievement levels of students furnishes information about the quality of teaching and of the learning materials used. It introduces accountability into the system and spurs on improvements in areas where weaknesses are identified. No form of accurate, reliable testing existed in either province.

DEVELOPING INSTRUCTIONAL MATERIALS

Project staff set up an Instructional Materials Development Cell (IMDC) where textbooks, annotated teachers' guides, and supplementary material for early grades were developed. In developing instructional materials for Kachi, first, second, and third grades, the emphasis was on early learning and basic skills development. Given that the largest enrollments are in the early grades, instruction during the early years needs urgent attention. During 1990-91, 73 percent of the girls completed third grade. In 1991-92, the completion rate was 81 percent. By 1992-93, 92 percent completed third grade. The materials focus on skills development. Separate textbooks for Kachi were developed. Project staff produced textbooks in Pashto and Urdu in NWFP and texts were also to have been produced in four different languages in Balochistan.

The few teachers' guides published in the past were not used extensively. They contained content knowledge, elaborating upon the material to be found in the pupils' textbooks, but contained no information on how to teach the lessons. The new annotated teachers' guides provide a lesson structure for the teacher to follow and thereby act as a training manual for teachers in the absence of other forms of training.

A study undertaken in 1988 of effective teaching practices in Pakistani schools identified six basic features that characterized the instruction of teachers whose pupils performed better on achievement tests. These effective teaching practices are incorporated in the teachers' guides, with additional instructions for making lessons more diverse and culturally relevant and for use of locally available material as teaching aids. Given the weakness in content knowledge of most teachers, these structured teachers' editions, when used, help ensure that pupils are taught in an effective manner. The expectation is that a minimum achievement level will be attained by the majority.

Supplementary teacher support materials, such as alphabet and number cards, number lines, charts illustrating science processes, political and topographical maps were prepared, along with additional reading material for pupils — the equivalent of a small classroom library. Instruction

in English through Interactive Radio Instruction (IRI), included developing a script for the lessons, teaching guides, and workbooks for children to supplement the radio lessons.

Staff also conducted a contrastive analysis of Urdu/Pashto, Urdu/Baluchi, and Urdu/Brahui so that instructional materials could be developed that minimize the learning difficulties of children who have one of these languages as a mother tongue and another as a medium of instruction. To improve the quality and durability of textbooks, staff examined cost-effective ways to finance and upgrade textbook quality. An effort also was made to find ways to lower the prices of textbooks and supply free textbooks to students in disadvantaged areas.

IMPROVING TEACHER QUALITY — PARTICULARLY FEMALE

The instructional programs at teacher training colleges have begun changing to incorporate the findings of various studies such as teachers' content knowledge, multigrade teaching, and effective teaching practices. Emphasis has been placed on improving the faculty members' instructional skills and knowledge. The faculty at GCETs have attended seminars and workshops on instructional issues, such as how to teach beginning Urdu, how to teach fractions, how to arrange and manage a primary school classroom of from 40 to 100 children, and so forth. In turn, these topics were then to be taught to the teacher trainees.

The Accelerated Teacher Training Program consisted of the standard PTC syllabus compressed into three months and conducted during school vacations. The objective was to reduce, and eventually eliminate, the large backlog of untrained teachers, particularly in Balochistan.

The Mobile Female Teacher Training Program (MFTTP) in Balochistan was used to train local female teachers in rural areas. Mobile teacher units trained women who were identified as candidates for primary-level teaching through the Community Support Program.

In NWFP, the major task of the learning coordinators (LCs) is to supervise instruction in schools. Project staff assessed the effectiveness of the Learning Coordinator Program. Learning coordinators were then trained through workshops on instructional supervision.

DEVELOPING ALTERNATIVES FOR MULTIGRADE TEACHING

Multigrade teaching was improved through designing instructional materials that promoted independent learning. Textbooks included more self-explanatory lessons and exercises that students can do on their own. In addition, teachers were trained to manage a multigrade environment through emphasis on certain instructional practices, such as assigning tasks that kept children occupied while the teacher was busy with other classes and promoting a more productive use of student tutors, that is, peer teaching. Supervisors also were trained in observing multiclass

instruction, in identifying areas of weakness, and in helping teachers to acquire effective techniques.

QUALITY ASSURANCE ASSESSMENT AND MONITORING

To monitor and sustain the quality of education, a provincewide program of achievement testing for a representative sample of pupils in grades three and five was launched called the North East Assessment Program (NEAP). Criterion-referenced testing is used to determine whether the students are learning the content of their textbooks and hence ascertain whether or not curriculum goals are realized. Because pupil performance reflects, to a large degree, the quality of teaching the pupils have received, testing and the subsequent remedial measures taken to improve teacher performance will help ensure teacher accountability, as well, now a missing element in the system. What is envisioned is a self-correcting system where the results of the tests are analyzed and handed to the supervisors — assistant subdistrict education officers and learning coordinators — who, in turn, discuss with the teachers their areas of weakness, provide necessary in-service training, and propose remedial measures to be taken in the classroom.

In NWFP, criterion-referenced tests of the new materials, teacher interview guides and questionnaires, and classroom observation protocols were developed and used in the pilot schools as part of formative evaluation. These instruments were used in the 600 pilot schools in NWFP. After analyzing results, revisions were made in the instructional materials, the teachers' annotated editions, and the product specific in-service training that teachers received.

SCHOOL IMPROVEMENT PROGRAM

To increase the effectiveness and efficiency of primary education in NWFP, a School Improvement Program (SIP) was initiated in all districts of the province after a pilot in three districts. The program involves:

- ◆ Training district and subdistrict education officers to develop and commit themselves to carrying out formal action plans to set and achieve increased enrollment targets (particularly of girls) and to improve the quality of instruction and learning in their schools. The Director of Primary Education will monitor their achievement through a yearly academic review in each district.
- ◆ The SIP will be linked to Educational Management Information Systems (EMIS) indicators of enrollment and dropouts and to student performance on the NEAP annual assessment. It has been proposed that DEOs, whose districts perform well, should be given cash awards.

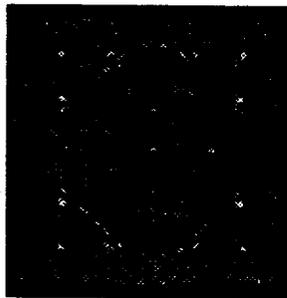
PRIVATE-SECTOR SUPPORT

Encouraging private-sector support for primary education through the establishment of provincial education foundations, namely the Frontier Education Foundation (FEF) and the Balochistan Education Foundation. The provincial governments will provide partial funding to the foundations, who will also seek funding from donors and the private sector. The foundations were created to further expand and improve private education in the two provinces through increasing investment in primary education by providing partial funding and advisory services to interested parties. It will ensure that through its policies and conditionalities for financial assistance, private schools become operational where there is a need. Primary education for rural girls has received top priority and will be promoted. In NWFP, the Education Foundation will be linked with the Community Support Program so that the village education committees can choose whether they want to their school to become a government school or continue as a private school.

In the latter case, through the foundation, the private sector will replace the role of the government in the provision of schools and or training teachers in those instances wherein the village education committees are willing and able to continue their schools as private schools. In Balochistan, on the other hand, the community-based schools are currently destined to become government schools once they prove their viability.

Chapter 3

The Program Approach



3. The Program Approach

The Primary Education Development Program has made quantifiable, positive changes in the educational systems of NWFP and Balochistan, and many of the changes appear to be sustainable. Possibly the most significant factor contributing to the potential sustainability is the PED implementation strategy: the program approach. In the late 1980s when USAID decided to design a *program*, rather than a *project*, to assist NWFP and Balochistan in improving basic education, the decision was a risky one that no one could be certain would produce the intended outcomes. USAID programs elsewhere had mixed results, and there was the potential for failure. Four years after its inception, PED proved USAID's decision to be a wise one. The foresight of USAID, the willingness of the two provincial governments not only to cooperate but also to take the lead in many instances, and the effective use of technical assistance brought about such significant results that the World Bank agreed to continue the program USAID began but could not complete because of the Pressler amendment.

The provision of technical assistance, in particular, appears to have been an essential and desirable catalyst for educational reforms in the two provinces. Working within the system in partnership with educators, PED technical advisers stimulated the provinces to institute change willingly. As a result, after four years of USAID assistance, NWFP and Balochistan can point to such accomplishments as increased enrollment rates for girls; increased numbers of female teachers in the teaching force and policy reforms regarding the service rules; improved and increased numbers of instructional materials and an internal capacity to develop the materials; new directorates of primary education and enhanced capacity of the personnel; increased promotion of female employees in the educational system; new educational management information systems; and private-sector and community involvement in primary education.

Had PED run its ten-year course, one can reasonably assume that the potential for reform and sustainability would have been even greater, given what PED was able to accomplish in such a short time. An understanding of what USAID means by the two modes of implementation — project and program — will help clarify the reason for choosing one approach to development assistance over another and demonstrate why the program approach to PED was successful.

DEFINITIONS: PROJECT AND PROGRAM

A *project* is a mode of assistance that AID designs, appraises, implements, supervises, and evaluates, albeit with as much host-government participation as can be urged. It provides funding for specific inputs such as technical assistance, commodities, vehicles, salaries, training, and infrastructure (from *Nonproject Sector Assistance Guidance*, AID's Bureau for Africa, 1992). Typically, a project consists of well-defined steps, often completed within three to five years, that result in a specific product or activity, for example, school construction, mass immunization, or relief efforts in response to famine or floods. A project does not usually require organizational change for the objective to be met. It allows contractors or another independent entity, such as

a project implementation unit (PIU), to work outside the larger system and operate instead on an organization-to-organization basis. A project tends to operate in a simple environment of its own creation. It can usually bypass external constraints or can develop an alternative delivery system parallel to the existing one. Such an approach can support large-scale activities that are not aimed at restructuring the system. (In some cases, the system is not ready to accept change; in other cases, changing the system is neither needed nor desirable.) Financing for a project is almost exclusively development funds, not recurrent budget funds of the host government.

Depending on the situation, the project approach can have limitations. Because projects require demonstration of certain results at preordained times, they allow for little flexibility regarding objectives. If conditions change in the host country during project implementation, project objectives do not necessarily change. Such a static approach may result in a product unrelated to the need — or lack of any product at all.

A *program* is a mode of assistance that provides resources in a generalized manner to achieve objectives broader than those of a project and which are usually related to systemic reform resulting from changes in policy, procedures, and attitudes. The program approach is designed to strengthen the organization and be sustainable long after donor funding has ended. It is a *process* of change that takes the longer view than a project does. Management of the process comes from within the existing host-country organization, not from a project implementation unit or other outside entity created or hired for the purpose. In the PED Program, for example, no Office of Primary Education Development, or PIU, was set up separate from the Education Department. Principal noncontract PED personnel were regular NWFP or Balochistan government employees; expatriate technical advisers served as their partners in government offices, sharing responsibility and stimulating them to institute changes willingly.

In a program, the host country must assume ownership. The more the host government identifies the objectives of a sector reform and the changes necessary to achieve objectives, including significant policy reform, the more appropriate a program approach may be. The more responsive the system is to absorbing the entire program and all of its components, the more likely it is to adopt the necessary policy and administrative changes necessary for the program to be successful. In Balochistan, for example, the government demonstrated ownership early by committing development funds to make the education management information system operational even before the first grant from USAID arrived. Likewise, it modified the service rules to include women and to encourage merit-based, marketplace competition for several government posts. USAID never specified changes in the service rules as a requirement; Balochistan officials recognized the changes as necessary to ensure sustainable organizational development. In NWFP, the plans for the reform of the educational directorate were well under way before PED began. During the first year of PED, the government moved quickly within the program structure to complete the process of bifurcating the directorate into separate primary and secondary directorates.

In a program, the financing mechanism is different from that of a project. The financing, which is usually a combination of significant host-country recurrent funds and development funds, does

not purchase specific commodities or services that directly support project-type objectives. Instead, disbursement of resources is linked to improving specific policy, institutional, or other host-country actions that are deemed constraints to long-term development. USAID provides the "untied" funds to the host government but imposes certain "conditionalities" on their release: USAID and the host government agree upon actions that, when completed, will trigger disbursement of USAID funds, which are paid out periodically in "tranches" in accordance with progress on the policy agenda. In PED, for example, release of funds was linked to completion by the NWFP and Balochistan provincial governments of activities set out in the annual plan that, in turn, led to achieving goals ("benchmarks") agreed to by USAID and Pakistan. Many innovations were being institutionalized as they were being implemented.

But the funding structure, effective as it may be in the process of change, will not alone produce intended results; an internal desire to act and a readiness to do so, more than any external pressure, are necessary. In other words, the government itself must be willing to foster change. A program is implemented within the system and according to the readiness of the system to make structural changes, a factor that requires flexibility, because the environment of a program, unlike that of a project, is complex and often involves multiple offices or levels of government. PED provides good examples of the manner in which the two provinces met program goals, but at different times. NWFP, for example, led in development of quality instructional materials and a strong internal capacity to develop them. Balochistan led in development of effective strategies for involving communities in a partnership for education. Balochistan was the first to establish an operational management information system; NWFP was close behind. NWFP, as noted, established the primary education directorate within a year of PED's initiation; Balochistan did so in the fourth year. Yet, all program goals have either been met already or are in a continuing state of evolution in both provinces. The PED Technical Advisers were critical to the process of creating a climate in which internal reformers could bring about changes. External pressure in the form of funding was used as a *leverage* to create a rationale used by the Pakistanis to bring about the desired changes.

For programs to succeed, not only must there be a core group within the organization committed to change, but also it must remain in position to direct development and be willing to persevere. Both NWFP and Balochistan offer cogent examples of continuity and stability in this respect. In each province, the present Director of Primary Education is the same person initially involved in the program five years ago — Shah Jahan Khan in NWFP and Ijaz Ahmed Malik in Balochistan. In addition, there was consistency in the technical assistance team and at USAID.

Both donor collaboration and coordination figure importantly in programs, although collaboration does not always imply cooperation. Despite competition at times among the donors in NWFP and Balochistan, however, a considerable amount of cooperation also occurred. The program approach, through internal planning and development of a systemwide implementation plan, discourages duplication of efforts by donors and the resulting waste of scarce human resources. In Balochistan, the government demanded that all donor activity be coordinated through the office of the Director of Primary Education and that all donors endorse this policy. In the early months

of PED, both NWFP and Balochistan established close coordination with UNICEF. UNICEF resources and PED TAs combined to implement the Human Resource Survey and the Mobile Teacher Training Program. Close coordination in Balochistan between PED and the World Bank has allowed for the smooth transfer of primary school funding assistance from USAID to the World Bank, with no delays or interruptions in the program.

Finally, USAID documents (*Nonproject Sector Assistance Guidance*) state that programs "must result demonstrably in increased welfare at the household level. The purpose of [a program] activity should be defined in terms of variables that are quantifiable and measurable." USAID, for example, is accountable for outcomes such as increasing the proportion of children going to school, getting through schools without repeating grades, and finishing school having learned something useful. Both NWFP and Balochistan can demonstrate through recent school censuses the increased access, particularly for girls, to primary education. The training provided to *all* untrained teachers should eventually result in attaining other objectives related to persistence in school and achievement.

SUMMARY OF PROGRAM THEMES

The themes of a program in general, and of PED in particular, may be summarized as follows:

- ◆ USAID financing *supports* a national program of educational reform; it does not *create* the reform.
- ◆ Budgetary support is conditioned on performance. The conditions precedent to disbursement of each tranche of funds serve as: (1) leverage points for advancing policy changes; (2) benchmarks of progress, or (3) demonstrations of government commitment. Effective TAs help to create the climate for policy change, which is an internal process that the funding structure further encourages.
- ◆ A systems approach is taken to educational change, in which reform of the entire educational system is viewed as necessary for sustainable improvement.
- ◆ Donor coordination is necessary. Unlike the project approach, in which each donor can operate within a specific program area, the program approach requires a review of the reform strategy and financing, including the support from all major donors.
- ◆ People-level impacts are the basis for program evaluations.
- ◆ In addition to readiness on the part of the host government to institute change, continuity of leadership and stability of government are necessary.

The goal of the PED Program is to enhance the institutional capabilities of the Balochistan and NWFP governments to formulate and implement policy that improves access, equity, and quality of primary education. Even at this early stage, PED is able to demonstrate both system-level and people-level impacts related to these goals that are attributable to the program approach. At the system level, PED has been instrumental in fostering policy change in such areas of sanctioned female teacher slots and contractual arrangements to educate girls in far-flung communities. At the institutional level, it has supported a major restructuring of the educational directorates in favor of primary education (through the bifurcation of the primary and secondary directorate). At the school level, it has assisted in increasing the number of school places available, particularly for girls in distant areas of Balochistan. At the community level, it has helped spawn an indigenous NGO, the purpose of which is to support primary education for girls and which has been the major impetus for empowering parents in communities of Balochistan to effect significant change in the numbers of girls in school, the number of female teachers trained to teach them, and the numbers of school buildings constructed for the purpose.

PED can also demonstrate impacts at the people, or household, level, although such impacts usually require a lengthy period of time to be proved. When it is impossible to cite an impact definitively, PED can show the *trend* at the policy level toward the eventual outcome. The most recent school census shows increased enrollment for both boys and girls in both provinces. The increase in girls' enrollment, particularly in Balochistan, is considerable. Likewise, the most recent census shows improved persistence for girls: in Balochistan, the dropout rate for boys and girls is approximately the same, that is, girls are not dropping out at the previous rate that exceeded that of boys. These trends in improvements in educational quality ultimate will lead to improved health, environmental, and economic conditions — and to the concomitant improvements in quality of life for people.

The mid-term evaluation of PED, conducted by external evaluators, perhaps best captures the sense of what PED has been able to accomplish through the program approach. The evaluators noted the following:

"The [PED] program is innovative and different from a more traditional project approach because it attempts to achieve balanced, long-term educational development goals, even at the expense of short-term discrete, predetermined developmental goals — sustainability and sector planning are emphasized over immediate results."

Although PED is ending too soon to demonstrate achievement of the long-term development goals, the follow-on BPED program (with World Bank financing) will most likely be able to do so and will thus be able to attest to the success of USAID's program approach to development in NWFP and Balochistan.

WHY USAID CHOSE THE "PROGRAM" APPROACH

The PED Project Paper, giving the program rationale, states:

"The program mode has been chosen over the normal project approach for two reasons. First, and most important, it puts the burden of implementation where it belongs — in the hands of provincial governments. Second, the program mode limits the management burden on the Mission. A project with more than \$100 million of construction that had to be contracted, monitored, and approved by USAID would have required an unacceptable level of Mission management for this component alone. Additional management would have been required to monitor activities in teacher training, curriculum and textbook development, and the administration and supervision of primary education" (Program Assistance Approval Document, June 1989).

At the time the PAAD was issued, total program funding was expected to be approximately \$280 million, including \$240 million in sector grant and \$40 million as technical assistance. Of the sector grant, more than \$150 million was expected to go for construction.

A project mode would have required the Mission to "track rupees." That is programming the use of every rupee and ensuring that the rupee is used for the purpose in which it was meant. This approach would have necessitated a huge Mission staff for monitoring the construction component alone. This would have meant also that the most important policy issues relating to the institutional capability of the two PED provinces, Balochistan and NWFP, to formulate and implement policy to improve access, equity, and quality of primary education, would have been obscured by implementation problems of the huge construction component. A project mode would have reduced PED to a "brick-and-mortar" activity. Project staff knew that for a meaningful and long-term development they had to focus on policy issues and the "software" side rather than on the "hardware" side.

The program approach, on the other hand, requires that USAID track only dollars which are used for repayment of approved U.S. debts. USAID tracks rupees only as far as the personal ledger accounts established in the names of the two provincial primary education directors.

As it turned out, adopting the program mode was the single most important factor in the success of PED. The program approach freed USAID and the senior government officials to focus on more important policy and "software" side issues. In the beginning of the program, in most meetings with senior provincial officials, project staff observed that the officials quickly skipped through the policy issues, such as administration and management, teacher training and supply, and curriculum, and focused on construction. It became obvious that considerable time would be devoted to a discussion of the construction component.

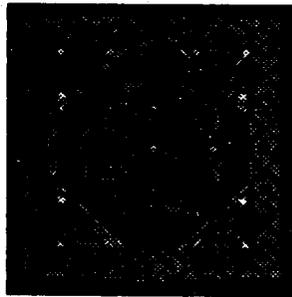
Perhaps one reason it happened was because these issues and their solution were too complex for the officials to comprehend or to talk about. Second, construction allows government as well as donors to disburse funds speedily. Having thus spent the funds everyone could claim completion and, as a "corollary," success of a project. Whether or not the disbursed funds actually resulted, for instance in primary education, in increased enrollment and improved quality, was not often clear if at all considered. In addition, very often the officials did not realize that the seemingly complex issues were not insurmountable. But there was no real need or pressure for them to spend more time on these issues.

The program approach allowed USAID to educate these officials and engage them, time and again, in exhaustive discussions of policy and software issues. Gradually, but well before the PED came to its early end, the officials became fairly conversant with these issues and seemed confident discussing complex policy and software issues other than construction. They still discuss construction but with full realization that construction is not the most critical hinderance to increasing enrollment in, and improving quality and equity of, primary education. This has gone a long way in establishing provincial governments' ownership of the PED Program and ensuring the sustainability of the initiatives taken under PED. With the understanding of more profound issues came the support for changes which can be considered radical by local standards, and this support has a strong likelihood of continuing beyond PED.

Because of the lessons learned through PED, the program approach has been acknowledged by all major donors as well as government officials as essential for such long-term and complex activities such as PED. The World Bank's follow-on primary education projects in Balochistan and NWFP are based on the same approach. The most important GOP effort in the social sector, the Social Action Program (SAP), is essentially modeled after PED's Program approach.

Chapter 4

Program Implementation and Development



4. Program Implementation and Development

PED was designed to strengthen the institutional capacity of the education departments in the Northwest Frontier Province and Balochistan in order to improve access, equity, and quality of primary education. Although the goal was the same for both provinces, widely divergent paths were followed to reach a similar level of development in the education systems in each of the provinces. Successful achievement of program goals was due primarily to the application of the program approach. An essential precondition for strengthening similar systems in different provincial environments was that program implementation should depend on the system's readiness to change and the level of development of the environment in which it was to be implemented.

A Comparison of NWFP and Balochistan 1990

NWFP		Balochistan	
Literacy Rates in NWFP		Literacy Rates in Balochistan	
Overall Literacy Rates		Overall Literacy Rates	
Total	16.7 %	Total	10.3 %
Male	25.9	Male	15.2
Female	6.5	Female	4.3
Urban Literacy Rates		Urban Literacy Rates	
Total	35.8 %	Total	32.2 %
Male	47.0	Male	42.2
Female	21.9	Female	18.5
Rural Literacy Rates		Rural Literacy Rates	
Total	13.2 %	Total	6.2 %
Male	21.7	Male	9.8
Female	3.8	Female	1.8

NWFP	Balochistan
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Primary School Enrollment

In NWFP, 78 percent of the enrolled school population were primary school children.

Of this population, a total of 46 percent constituted children in the first grade. Only 10 percent of these children were in fifth grade.

NWFP Dropout Rates

Urban Dropout Rates

Both sexes	63	%
Male	60	
Female	70	

Rural Dropout Rates

Both sexes	71	%
Male	70	
Female	78	

Girl Students

At the beginning of the program, the participation rate for girls was 34 percent.

Grade 5 Completion Rates

Urban	31%
Rural	22%

Dropout Rates

Urban	70%
Rural	78%

Primary School Enrollment

In Balochistan, 82 percent of the enrolled school population were primary school children.

Of this population, 50 percent constituted children in the first grade. Only 7 percent of these children were in fifth grade.

Balochistan Dropout Rates

Urban Dropout Rates

Both sexes	60	%
Male	56	
Female	80	

Rural Dropout Rates

Both sexes	79	%
Male	68	
Female	93	

Girl Students

Balochistan's participation rate for girls was only 17 percent.

Grade 5 Completion Rates

Urban	20%
Rural	7%

Dropout Rates

Urban	80%
Rural	93%

NWFP**Balochistan****Policy Reform**

As a result of its size and complexity, the bureaucracy is rigid. This situation hampered development because it is much more difficult to reform existing systems than it is to create new ones.

Setting

In terms of area, NWFP is the smallest province in Pakistan. It has many densely populated areas with one main ethnic group. Two native languages in addition to Urdu are spoken by the majority of the population. Because there is ample rainfall, there are more opportunities for cultivation compared with Balochistan. Where cultivation is not possible, pastoralism is the main occupation. Industrialization is limited but more evenly distributed.

Policy Reform

In Balochistan, the bureaucracy is comparatively smaller and less developed. There is lower resistance to change, and the opportunity exists to create new systems and procedures.

Setting

Balochistan is the largest province in Pakistan. It is sparsely populated, with three main ethnic groups each speaking a separate language. Because the climate is dry and arid, little farming is possible, and a large proportion of the population is nomadic. Sale of livestock is the main source of income for the nomadic population. Of all of the provinces, Balochistan is the most impoverished. One well-developed industrial state exists, but its effect is negligible. Most of the factories are owned by nonlocals who hire from within their own ethnic group.

NWFP**Balochistan****Educational and Economic Opportunities**

NWFP has a well-developed road and transport network. It is a matter of a few hours to reach most of the main population centers in Punjab. Thus, people from the NWFP can easily go to Punjab for higher education as well as employment. Since British times, certain districts of NWFP have been given preference in army recruitments. As a result, in NWFP the army has provided employment and educational opportunities for these recruits. The benefits carry over to the family and ultimately to the community. Relative to the population there are a large number of army-run educational institutions, which is again a part of the British legacy.

Level of Development

Fifty percent of villages were located within three kilometers of an asphalt road. Eighty percent of villages were less than eight kilometers from health facilities. Eighty percent of the villages were located within one kilometer of a primary school. Forty percent of the villages had a primary school for girls within one kilometer.

Educational and Economic Opportunities

Any town or village in Balochistan is at a minimum distance of 15 hours by road or train from any population center in Sind, NWFP, or Punjab. Even flying sometimes involves a journey of two days because numerous connections are required. Opportunities for quality education and employment are limited within the province. Because Balochistan is comparatively isolated, educational and economic opportunities for the people are limited outside the province as well. It was a part of British policy to keep the area underdeveloped, and the situation has not improved much since partition. The army has also not recruited from these areas — a carryover of old policies.

Level of Development

Twenty percent of the villages were located within 81 kilometers or more of an asphalt road. A total of 50 percent of the villages were less than eight kilometers from a health facility. Thirty-three percent of the villages were located within one kilometer of a primary school. Six percent of the villages had a primary school for girls within one kilometer.

NWFP	Balochistan
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Training Institutions

NWFP had 16 GCETs, with 15 of these focusing on the one-year PTC course. Training capacity was 2,500 teachers with 28 percent women. The Education Extension Center in Abbottabad was responsible for in-service training, but primary-level teachers were not usually given this training.

Training Institutions

Eleven colleges of elementary education existed, all of which were for in-service training only. A total of 675 men and 80 women could be trained annually.

Preservice Training

Approximately three-quarters of the teachers received preservice training at the start of the program, but there was a backlog of approximately 16,000 who were untrained.

Preservice Training

There were no teachers with preservice training and no policy for preservice training. Teachers received their training only after they had been teaching for five to seven years. The backlog consisted of 8,000 untrained teachers.

Female Teachers

There were many well-qualified females who were prepared to teach. The competition was so keen that only half the number of female applicants for PTC training were accepted. Most of these applicants were fine arts certificate holders and were overqualified. Thus, NWFP started with mechanisms to enhance the selection of teachers.

Female Teachers

In Balochistan, the difficulty was to find a Middle Pass woman who would be prepared to teach. For example, in the whole *tehsil* of Jiwani, there was not one eighth grade pass girl. The existing female teaching staff were primarily comprised of nonlocals who were unprepared to go into the rural areas where the need existed.

NWFP	Balochistan
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School Facilities

Buildings were of higher quality, better maintained, and contained more classrooms per school. The rooms were well ventilated and lighted, but exceptions did exist.

Learning Coordinators

There are 500 learning coordinators who were members of the Education Department and who were on the regular (recurrent) budget as well. These learning coordinators had received training. There were approximately 271 LCs, however, who were employed by the World Bank-funded Primary Education Project II (PED II) and who were not regular members of the department.

DEO Authority

Five DEOs were the drawing and disbursing officers for paying teachers and making minor purchases. The DEOs had the authority to employ teachers and transfer them within their own districts.

School Facilities

In the large population centers of Balochistan, overcrowding was the main problem. In rural areas, there were no buildings or they were in such a state of disrepair that they could not be used. As a result, many classes would have to be held outdoors. In almost all cases, the smallest children would attend classes outside.

Learning Coordinators

The 292 learning coordinators in Balochistan were part of a donor-funded project and not part of the Education Department. Not one Learning Coordinator in Balochistan was part of the regular (recurrent) budget, and none had any authority.

DEO Authority

In Balochistan, fiscal authority lies with the Director of Primary Education, who delegates this authority to the DEOs. This arrangement makes it easier to identify expenditures and to coordinate donor investment.

NWFP**Balochistan****Data Collection**

In NWFP at the start of the program, data collection was being carried out through a temporary agency, the Management Unit for Statistics and Training (MUST), funded only from year to year as part of the development budget, not the regular recurrent budget.

Curriculum Bureau

The Curriculum Bureau is in Abbottabad, 180 kilometers from Peshawar where the Education Department, Textbook Board, and MUST are located. This situation hampered communication. The bureau had only a small professional staff, too small to be effective in either administering in-service education or supervising preservice education. Consequently, they were involved primarily in administrative work.

Achievement Testing

A tradition of teacher-made testing exists at all educational levels in NWFP. Although tests at the primary level were not of a high standard, the structure and preparedness for testing existed. Thus, it was possible to create and administer a Northwest Educational Program.

Data Collection

A total of 129 different reports were being produced on education, but a single system was nonexistent.

Curriculum Bureau

In Balochistan, the Curriculum Bureau is located within easy access of the primary and secondary education directorates and the Textbook Board. There is a large professional staff with strong leadership in a more central location. This close working relationship made it possible to successfully implement the MFTTU, the accelerated teacher training, and IMDTC programs.

Achievement Testing

In Balochistan, two types of tests are carried out at the primary level. The scholarship exam is standardized, but it is not given to all students. The majority of students are simply given an informal test by their tutor in fifth grade so that they can be promoted to the next class. The utility of these tests is limited because of the large-scale cheating that takes place during examinations at every level in Balochistan.

NWFP	Balochistan
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Competing Donor Activities

At the inception of the PED Program, there were four competing instructional materials development projects in NWFP. MUST, a government-sponsored EMIS, was supplanted by an EMIS developed by PED.

Competing Donor Activities

In Balochistan, donor activities were centralized under the PED Program soon after its inception. Because there were not as many competing donor activities in Balochistan as in NWFP, centralization was relatively easier to achieve.

Gender Equity

IN NWFP, there were female DEOs from the start of the program, and there had even been a female Director of Schools.

Gender Equity

The Service Rules in Balochistan prohibited a woman from being promoted to most positions at Grade 18 and above, thereby automatically excluding them from becoming either DEOs or directors.

Data furnished by: *Social Soundness Report*, Andrea Rugh; *Instruction and Materials*, Wade Robinson; and *Construction*, James Stephenson, Roy Haftorson, and Nadir Abbas.

PROGRAM COMPONENTS

Some of the program areas which developed differently are discussed below to illustrate how the foregoing environmental differences and system readiness affected implementation and development of plans in that specific area.

Directorate of Primary Education

The Directorate of Primary Education was established in NWFP in 1990, but in Balochistan, it was not established until 1993. Prior to the implementation of PED, two separate plans had been developed by two different groups of USAID consultants for bifurcating the education departments in both provinces. Both plans described the manner in which establishment of

separate directorates was to take place. The plan proposed for Balochistan, however, was weak and was, therefore, unacceptable to the government. This rejection was in part due to the fact that the system was unprepared for a separate Directorate of Primary Education. Within the Education Department, the opposition came from the unions (SESA) and others with vested interests. The independent PIU for primary education, set up with World Bank credits, also resisted the idea. The concept of a separate DPE was opposed by these groups because they feared the loss of personal benefits, including promotions, commissions, and high salaries. Therefore, a compromise was reached, and in the 1989 Program Grant Agreement it was stated that initially a Deputy Directorate was to be established in Balochistan.

In NWFP, a separate directorate was able to be established more quickly because the implementation plan was acceptable to the government and because the bifurcation from secondary was incomplete. Also, NWFP could accommodate the change because of the well-developed bureaucracy and the availability of well-qualified people to fill the positions. The continuity of technical advisory support was another factor. The Chief-of-Party for the PED Program was based in NWFP and had contributed to the earlier developments of the plan during a prior consultancy.

In Balochistan, the directorate was established after three years of discussion and debate. Perhaps because of this delay PED was able to promote many other changes which helped make the directorate fully operational. In NWFP, to date, the DPE is not fully bifurcated from secondary education and, therefore, is not operating as effectively as it should. Bureaucratic hurdles similar to those faced by the NWFP Directorate of Primary Education were tackled by the Balochistan PED before establishing the directorate. In fact, the Chief-of-Party in NWFP advised the Team Leader-Balochistan and the government officers on potential problems. Government officials from Balochistan also visited NWFP with the Technical Adviser to learn for themselves how to (or not to) approach the reorganization.

Community Participation

Balochistan had the lowest participation rate for girls in Pakistan, and there were hardly any Middle Pass women who were prepared to teach. Girls' schools represented only 10 percent of the total. Although the urgency of the need for female education in rural Balochistan was acknowledged by the government and the general public, no steps had been taken to alleviate the situation because of myths of community resistance and ignorance on the part of community leaders. Further, in many villages there was no sense of community. The *Saddar* made the decisions.

In NWFP, the participation rate for girls was twice that of Balochistan, and highly qualified female teachers were available. Therefore, the state of female education was not perceived as being as dismal as that in Balochistan. There was not the same urgency evidenced by the government to address the problem of rural villages. According to the Balochistan government, girls' education was lacking because there was no support for the idea from the communities

themselves. To counter this argument, with UNICEF support, funding, and encouragement, the PED Program conducted the human resource survey, which proved that the majority of villages wanted schools for girls.

Because the number of teachers willing or able to go to teach in the rural areas was limited, the Mobile Female Teachers Training Unit was started. Local girls were unable to travel to central training institutions because of *pardah* and other traditional restrictions on females. The MFTTU, therefore, went into the rural areas and trained local girls as teachers. Initial problems with girls recruited for the program showed that the community must be involved if such an effort is to succeed. Community involvement by the PED Program made the rural school development effort a success. It ensured that girls were from the village and that the village would support the school. The necessity of community participation was felt by the Secretary of Education, and he sanctioned the number of posts necessary for the MFTTU. An anecdote illustrates why the community school program was successful.

A monitoring team visiting a community-supported school was impressed by the quality of locally made instructional materials available in the classroom. When asked the source, the young female teacher explained that her brother, who taught in the nearby government boys' school, had assisted her in developing the material. Later, the boy's school was visited. No such materials were evident. When the brother was asked why he had not prepared similar materials for his classrooms, he answered simply: "That's *our* school!" (referring to their ownership of the community school).

Because the MFTTU met with such a vigorous response from the community, it was felt that this wellspring of support should be institutionalized. The Society for Community Support to Primary Education in Balochistan (SCSPEB), an NGO, was established to assist the government in managing the expanding program and to train DEOs and SDEOs in the process of enfranchising communities and assessing community readiness to take the responsibility. The objective of this NGO is to increase girls' enrollment through community participation in establishing girls' schools and recruiting female teachers. Currently, the SCSPEB and the Balochistan Technical Adviser for Community Support are working with the NWFP to train a local NGO in NWFP to assume the role that the PED and the Society play in Balochistan.

Teacher Training

The objective in both provinces was to train the backlog of untrained teachers and to establish the tradition of having all new teachers go through preservice training. NWFP PED relied on the Allama Iqbal Open University training course to train the backlog of teachers. The AIOU could not be used in Balochistan because the vast distances did not allow for a sufficient number of

teacher candidates to be assembled in one place on a regular basis, as required by the AIOU program. In Balochistan, an accelerated training program was started to instruct the backlog of 8,000 untrained teachers. A similar program also was inaugurated in NWFP. The MFTTU began in Balochistan and will be adapted for use in NWFP in the more remote rural areas where, as in Balochistan, the need for female teachers exceeds the supply.

Instructional Materials

Kachi and Pakki materials have been developed and field-tested for a year each (formative evaluation) in 600 schools in NWFP. Pilot testing could not be done in Balochistan because of the opposition of the large and powerful pre-existing Curriculum Bureau center. This year pilot testing will be carried out, but it will be done by the Education Department of the University of Balochistan, due to transition in TAs. This transition and resistance from the Curriculum Bureau were the main reasons why the development of instructional materials proceeded at a slower pace in Balochistan.

Construction

In Balochistan, a separate Directorate of Civil Works exists within the Education Department. The resources of this department were limited, and the quality of school construction was acknowledged as being poor. With the assistance of USAID and the PED team, the government developed a tender and hired a private A/E Firm to assist in planning, managing, and supervising primary school construction. This was possible because the Directorate of Civil Works was within the Education Department. Had it been a separate C&W department as in NWFP, the process would have been more difficult. The firm was able to improve the quality of school construction through better design, documentation, site selection, and so forth.

In NWFP, the C&W Department is still in charge of school construction. Government officials have not been as cooperative as in Balochistan, but have now agreed to set up a Construction Advisory Unit within the DPE that will employ an A/E firm to manage and supervise all primary education construction and maintenance.

PROGRAM APPROACH

The PED Program is a comprehensive approach to addressing the problem of lack of primary education facilities in the two most underdeveloped provinces of Pakistan. It is possibly the most comprehensive approach used by USAID for any of its development activities in Pakistan and is the main reason for the success of this program. Human development activities such as primary education are complex and require an approach that can address this complexity. Isolating any one aspect of primary education and then bringing it to the level of developed countries simply means that the remaining aspects of the system will not be able to adjust and absorb the changes. An analogy is that of organ transplants. The body will reject anything that does not fit in with its system. For primary education, the whole system needed to be reformed.

Because of its comprehensiveness, the PED Program was able to bring change in every area focusing on primary education — starting with the management and development of the administrative systems of the provincial primary education system to the reform and improvement of curriculum materials. Change in each area enabled improvements in other areas. For example, to increase girls' enrollment all new schools had to be constructed near the villages. Because many parents would not allow their daughters to be taught by male teachers, females had to be recruited. The Community Support Program and MFTTU were started for this very purpose. In Balochistan, changes in service rules were necessary to have female DEOs who would supervise the female teachers because male supervision was unacceptable to many women. Thus, three of the four program components were involved in bringing about an increase in girls' enrollment. At the same time, the fourth component was getting gender bias out of the textbooks and supplementary materials. Similarly, to achieve any other objective of the PED Program the participation of at least two program areas was necessary and required the involvement of governmental bodies, private NGOs, and other donor organizations.

The more conventional manner for addressing such development activities is to isolate efforts and concentrate only on such areas as curriculum reform and teacher training. This approach failed miserably in the Sindh Province. When parts of a system needs to be reformed then this approach is understandable, but when an entire system needs to be developed or reformed then the entire system must be addressed. Each component area enables reform in other areas; basically each reinforces the other to bring about systemic change. The PED Program has four main component areas that work concurrently to reform the entire primary education system. These four main areas are as follows:

Administration and Management. This component works toward strengthening the administration, management, information gathering, and policy reform capacity of the primary education system, as shown in Table 5.

Teacher Training. This activity is required to increase the number and quality of trained teachers available, particularly female, as demonstrated in Table 6.

Curriculum Reform and Instructional Materials Development. This component involves revising the curriculum to meet the needs of the students and to develop student-centered materials, according to the plan in Table 7.

Construction. This component focuses on building new schools and maintaining existing primary schools so that the youngest group of children does not have to sit outside on the school ground exposed to the elements.

Table 5

**Administration and Management
Program Component**

EVENT	PLAN		
	Final	Accepted	Action
Bifurcation of Primary Education	Complete	Complete	Complete
Decentralization of Primary School Administration at Divisional Level	Complete	Complete	Complete
Female Promotion Program	Complete	Complete	Continuing
Performance Monitoring System	Complete	In review	Operational 7/94
Private-Sector Involvement Plan	Complete	Complete	Complete
Primary Education Foundation	Complete	Complete	Complete
Organizational Structure for NGOs and Community Participation	Complete	Complete	Complete
BEMIS Development	Complete	Complete	Complete

Source: Directorate of Primary Education, NWFP and Balochistan.

Table 6
Teacher Training and Supply
Program Component

Pakistan School Year	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
Supply of Primary Teachers						
Male Primary Teachers	11,400	11,900	12,200	12,473	13,428	13,598
Female Primary Teachers	1,800	2,000	2,100	2,020	2,560	2,690
Percent of Public Schools with Sufficient Teachers						
Percent Boys	N.A	N.A	65%	75%	85%	85%
Percent Girls	N.A	N.A	76%	77%	80%	81%
Primary Teacher Training (GOB Programs)						
Percent of Males Certified	32%	38%	44%	48%	76%	86%
Percent of Females Certified	43%	44%	49%	53%	68%	72%
MFTTP Trainees	N.A	N.A	86	250	120	120

N.A. = not applicable.

Source: Directorate of Primary Education, NWFP and Balochistan.

Table 7
Curriculum Program Component

Activity	Year
Development of <i>Quaida</i> Literacy Materials	1992
Establishment of Instructional Materials Development Cell	1992
Staff of IMDTC Attached and in Place	1992
Procurement of Desktop Publishing Equipment	1992
Training of Staff on Desktop Publishing Equipment	1992
Training of Staff on Urdu Nastaleeq Software	1992
Completion of Textbook Reform Plan	1992
Presentation of Federal Curriculum Review Document to Federal Ministry	1993
Training of Writing Teams for First and Second Grade Materials	1993
Completion of First and Second Grade Materials	1993
Training of Textbook Board Subject Specialist and IMDC Staff for Three Months in U.S.	1993
Pilot Testing of Materials for First and Second Grades	1994
Training of Writing Teams for Third Grade Materials	1994
Writing of Third Grade Materials	1994

Source: Directorate of Primary Education, NWFP and Balochistan.

SUMMARY OF OUTCOMES

The extent to which the program goals of increasing access and quality of primary schooling in an equitable and efficient manner in the Balochistan and Northwest Frontier provinces have been met are measured directly by primary-level enrollments and primary retention indicators such as dropout and completion rates. Any improvements are a consequence of the activities undertaken

in the four program areas: administration and management, teacher training and supply, curriculum and instructional materials development, and construction. The accomplishments realized during five years of program intervention also reflect the overall goal to reform the education system in both provinces.

Primary-Level Enrollments. In both provinces reliable data became available in 1990-91, when the first school census was carried out by the newly established Educational Management Information Systems (EMIS) in both provinces.

Northwest Frontier Province

During 1988-89, girls' enrollment increased systematically. Since fiscal 1990-91, girls' enrollment has increased by 28 percent in Balochistan and by 34 percent in NWFP. Boys' enrollment also shows an overall increase. An erratic variation, however, in enrollment data over the years is apparent. Enrollment targets for 1999 can be achieved if increases follow the same pattern. As indicated in Figure 4.2, on the following page, the ratio decreased from 3.6 boys to one girl to 2.2 boys to one girl.

Balochistan Province

Both male and female enrollments have consistently increased with boys' enrollment exceeding the 1994 target. Compared to fiscal 1990-91, in 1994, enrollment for girls has increased by 30 percent and enrollment for boys by 13 percent. The ratio steadily decreased from 5.4 boys to one girl to 3.4 boys to one girl, as shown in Figure 4.4. The gender disparity in Balochistan has always been more marked than that of NWFP.

Primary Retention Indicators. These data were available following implementation of the Educational Management Information System (EMIS) and the initiation of a provincewide school census conducted every year since 1990. The Kachi-Pakki dropout rate and third grade completion rates were considered important indicators of primary retention because empirical evidence prior to program intervention indicated that most primary-level children dropped out of the Kachi grade, and most girls did not complete third grade.

Northwest Frontier Province

As shown in Figure 4.5, the dropout rate between Kachi and Pakki (grade 1) decreased from 15.0 percent in fiscal 1990-91 to 2.61 percent in fiscal 1993-94. This dramatic decline occurred in 1992-93 and 1993-94, from 10.5 percent to 2.61 percent. The introduction of new instructional materials and improved supervision of teachers are probably responsible for this improvement. Third grade completion rates also improved, particularly for girls. As shown in Figure 4.6, there was a 21.6 percent increase, from 60.0 percent in 1990-91 to 81.6 percent in 1993-94.

Figure 4.1. Primary enrollment (grades K-5) 1988-89 through 1993-94, NWFP

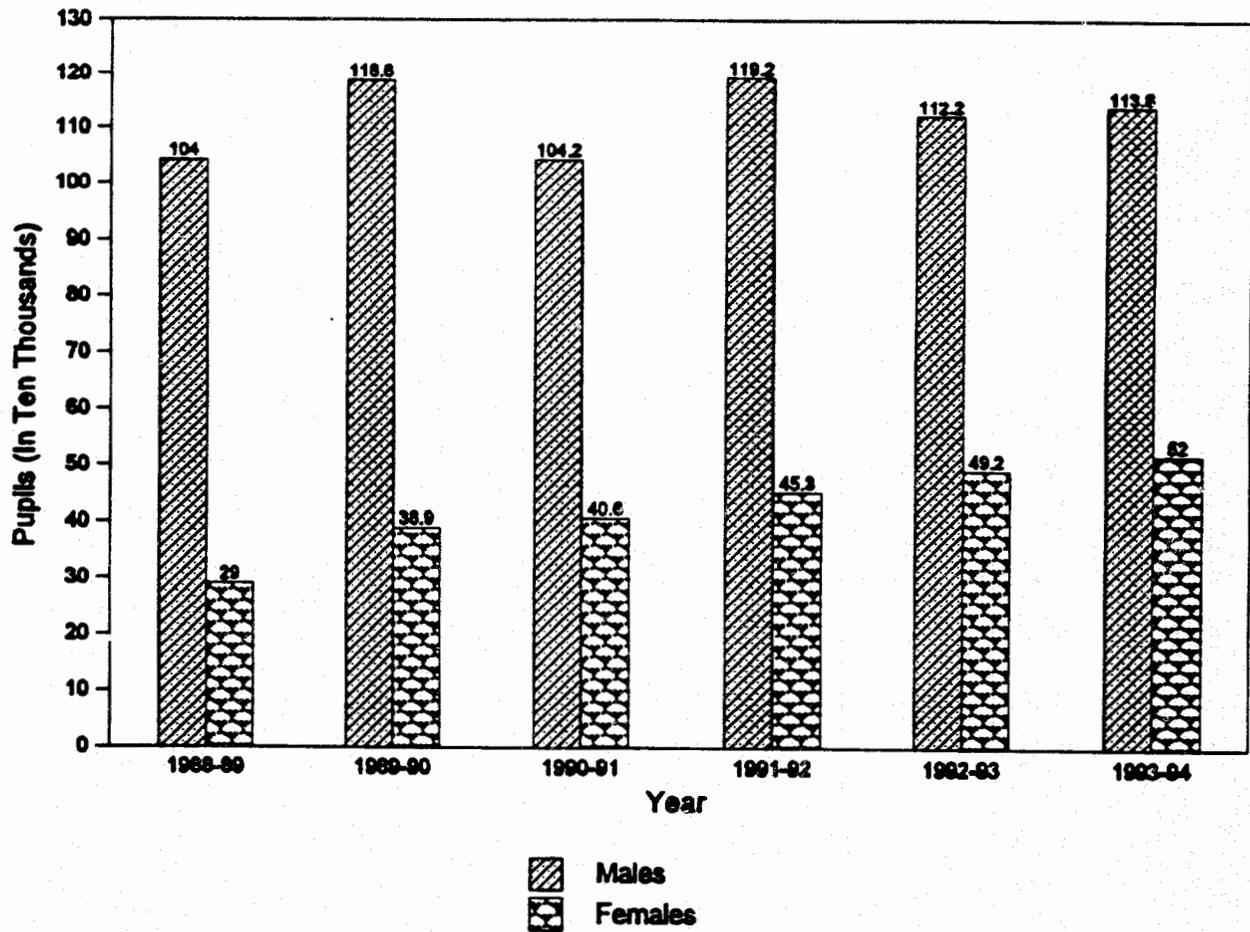


Figure 4.2. Ratio of males to females in primary grades, 1988-89 through 1993-94, NWFP

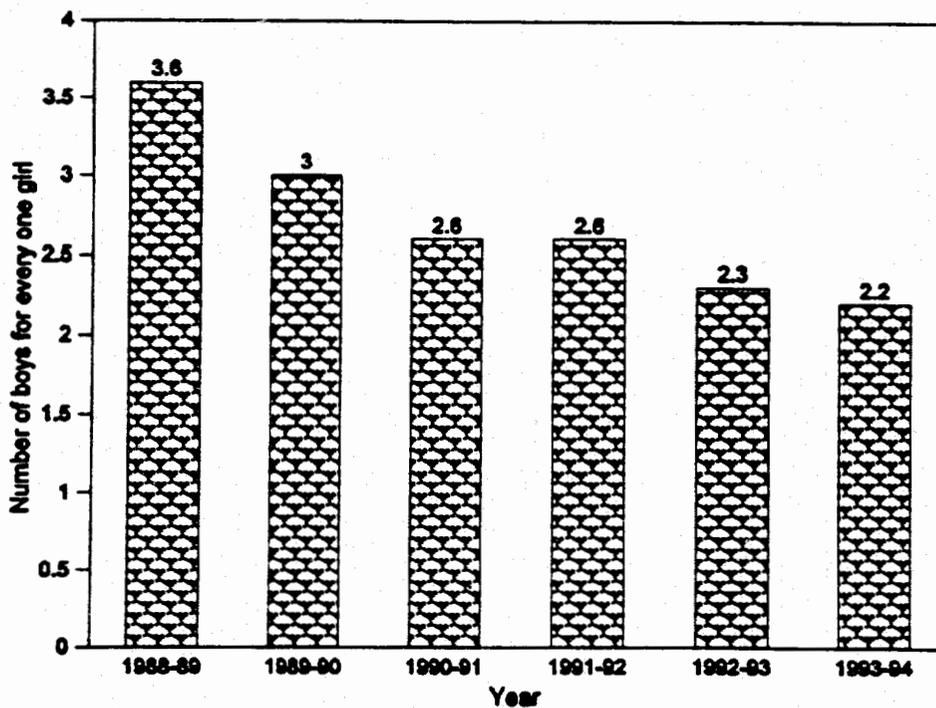


Figure 4.3. Primary enrollment (grades K - 5), 1988-89 through 1993-94, Balochistan

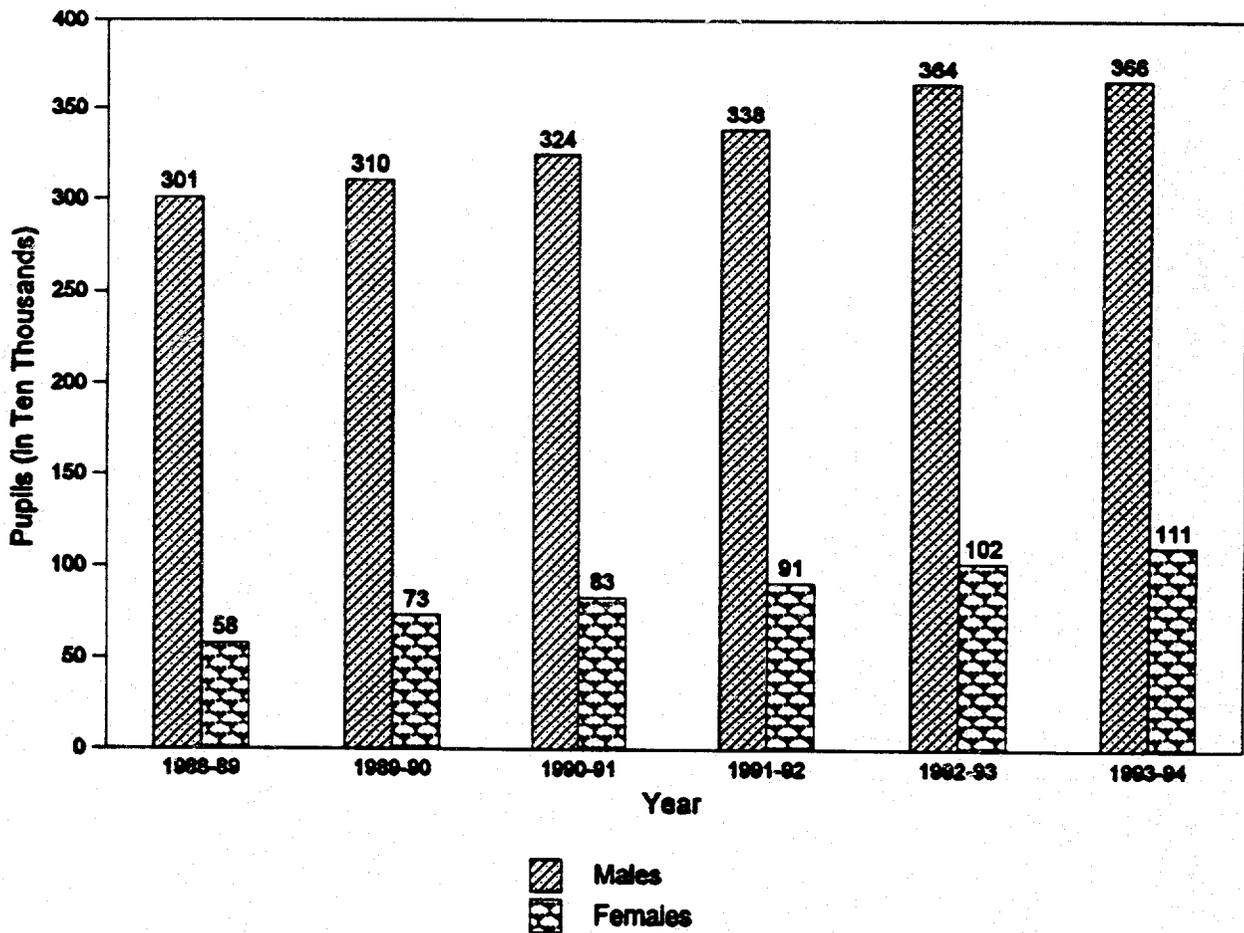
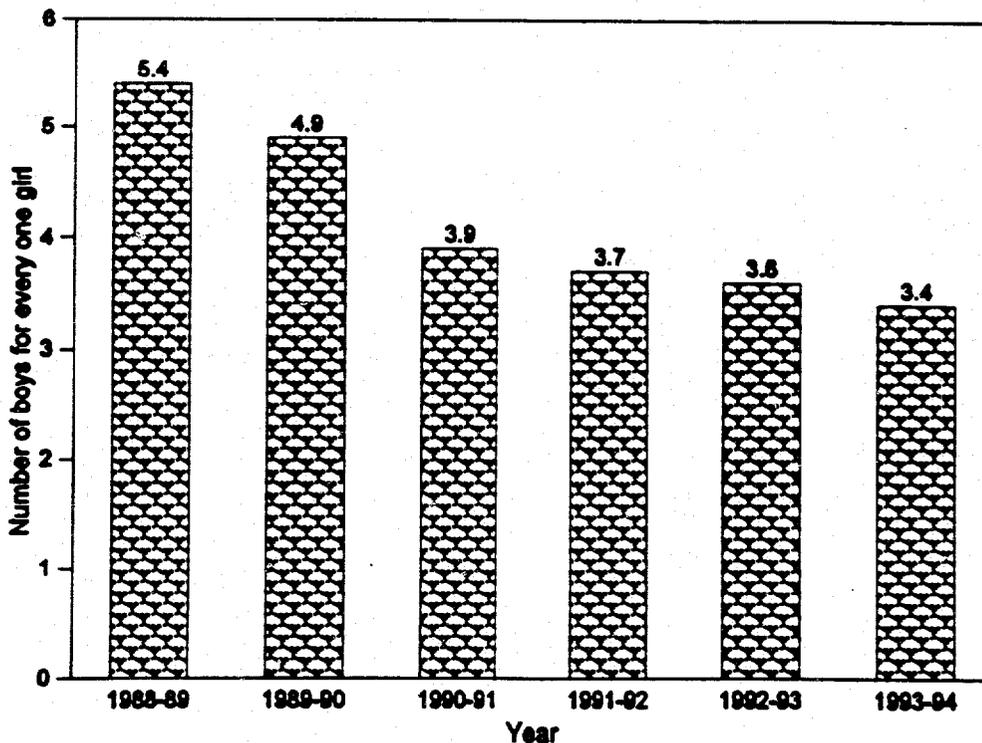


Figure 4.4. Ratio of males to females in primary grades, 1988-89 through 1993-94, Balochistan



Balochistan Province

As shown in Figure 4.7 on the following page, in Balochistan, the Kachi-Pakki dropout rate has remained almost constant at 27 percent over the same period. Third grade completion rates, however, showed an improvement for both boys and girls. From 1990-91 to 1993-94, the completion rate for boys increased by 8 percent and that for girls by 11 percent, as indicated in Figure 4.8.

ADMINISTRATION AND MANAGEMENT

Northwest Frontier Province

Bifurcation of Primary Education. The major institutional reform of the education system was the formation of the Directorate of Primary Education in June 1990, which became operational in January 1991. The directorate is 90 percent staffed and has received management training. To date, 20 district education offices with authority for primary education have been staffed and are operational.

Financial Support. Both recurrent and development budgets have on average shown an annual growth rate of nearly 10 percent in real terms. This is well over the PED-mandated annual increase of 5 percent.

Educational Management Information System (EMIS). The EMIS was established in order to furnish accurate, timely, and relevant educational data for improved planning and decision-making. Accomplishments to date are as follows:

1. **Computer cells** have been established at the provincial and district levels. A computer laboratory was set up in the Research, Development, and Evaluation (RD&E) section of the directorate, and 12 computers have been installed. Staff were trained in their use. Computers were installed in 17 districts and training was provided to district staff.
2. Since 1990, **four school censuses** have been conducted annually. The census data were analyzed and reported by EMIS.
3. A **Financial Information Management System (FIMS)** has been developed and implemented in seven districts. The FIMS has three components addressing recurrent expenditures, the Personnel Ledger Account, and development expenditures, primarily for construction. The recurrent expenditures' component is being implemented at the district level.

Figure 4.5. Kachi-Pakki dropout rate, 1990-91 through 1993-94, NWFP

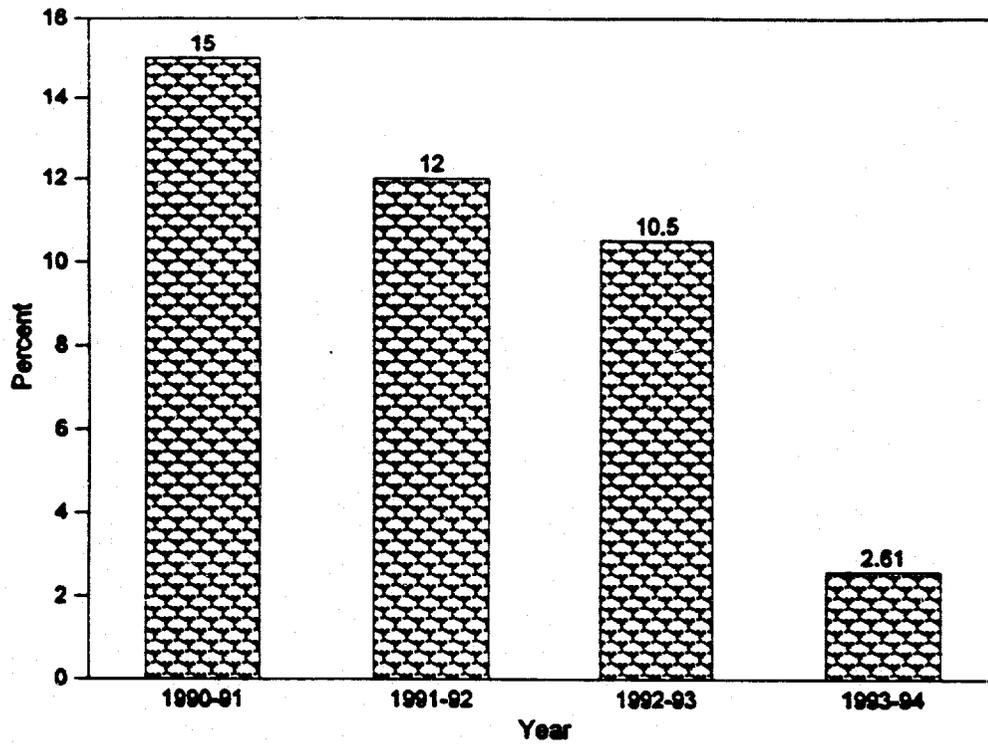


Figure 4.6. Completion rate for third grade, 1990-91 through 1993-94, NWFP

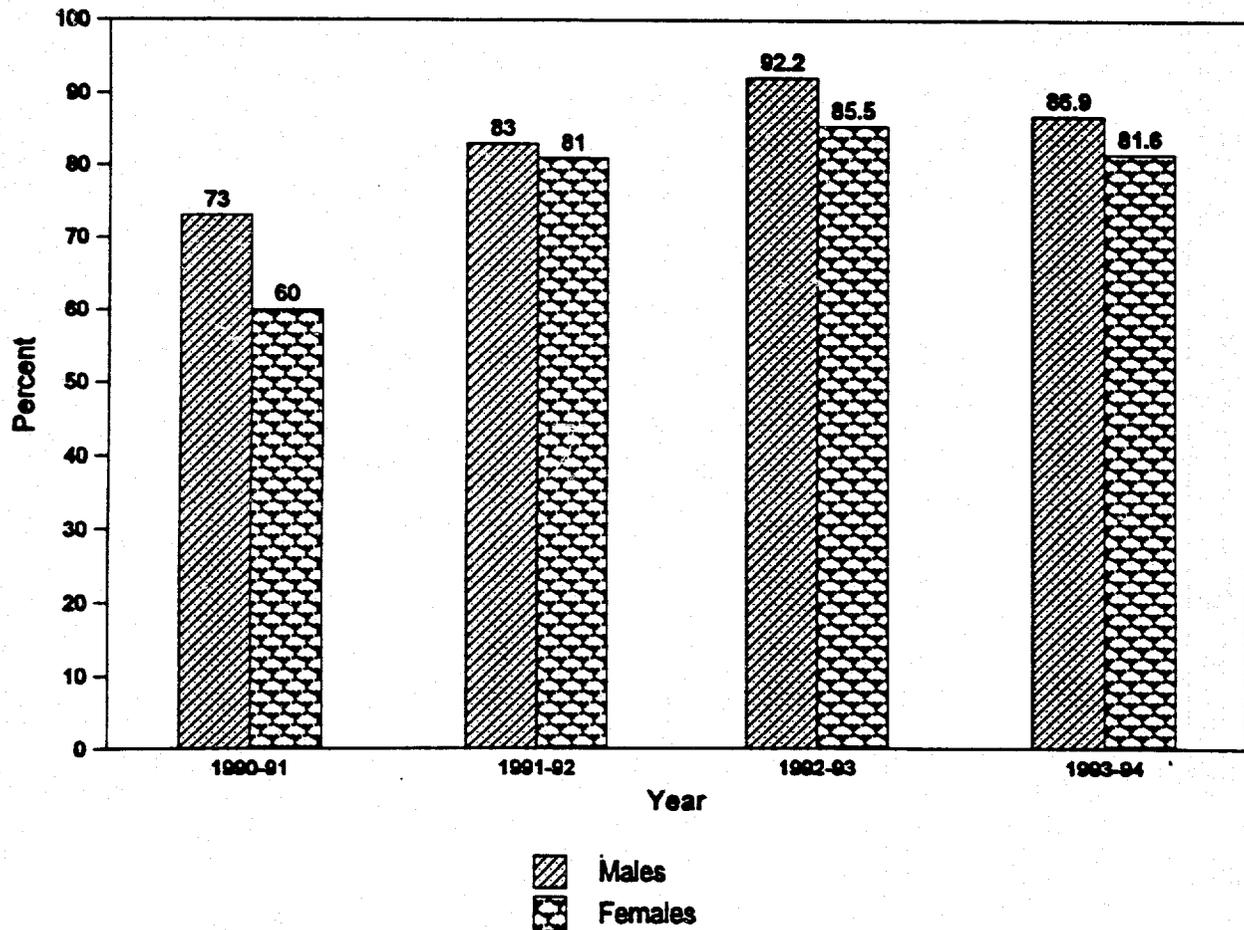


Figure 4.7. Kachi-Pakki dropout rate, 1990-91 through 1993-94, Balochistan

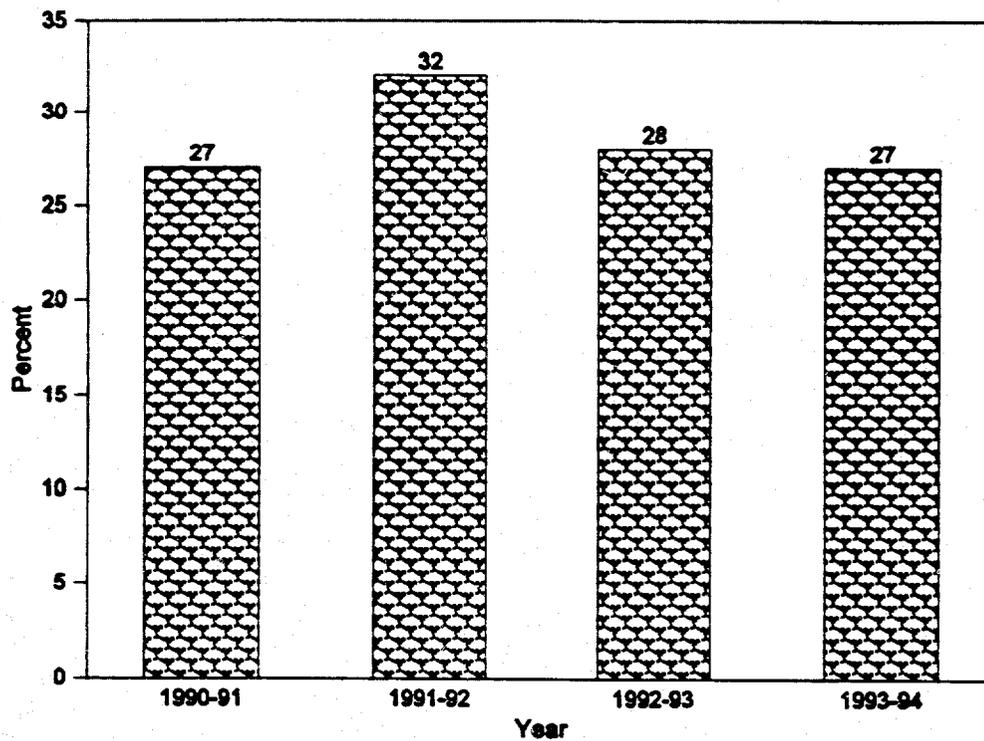
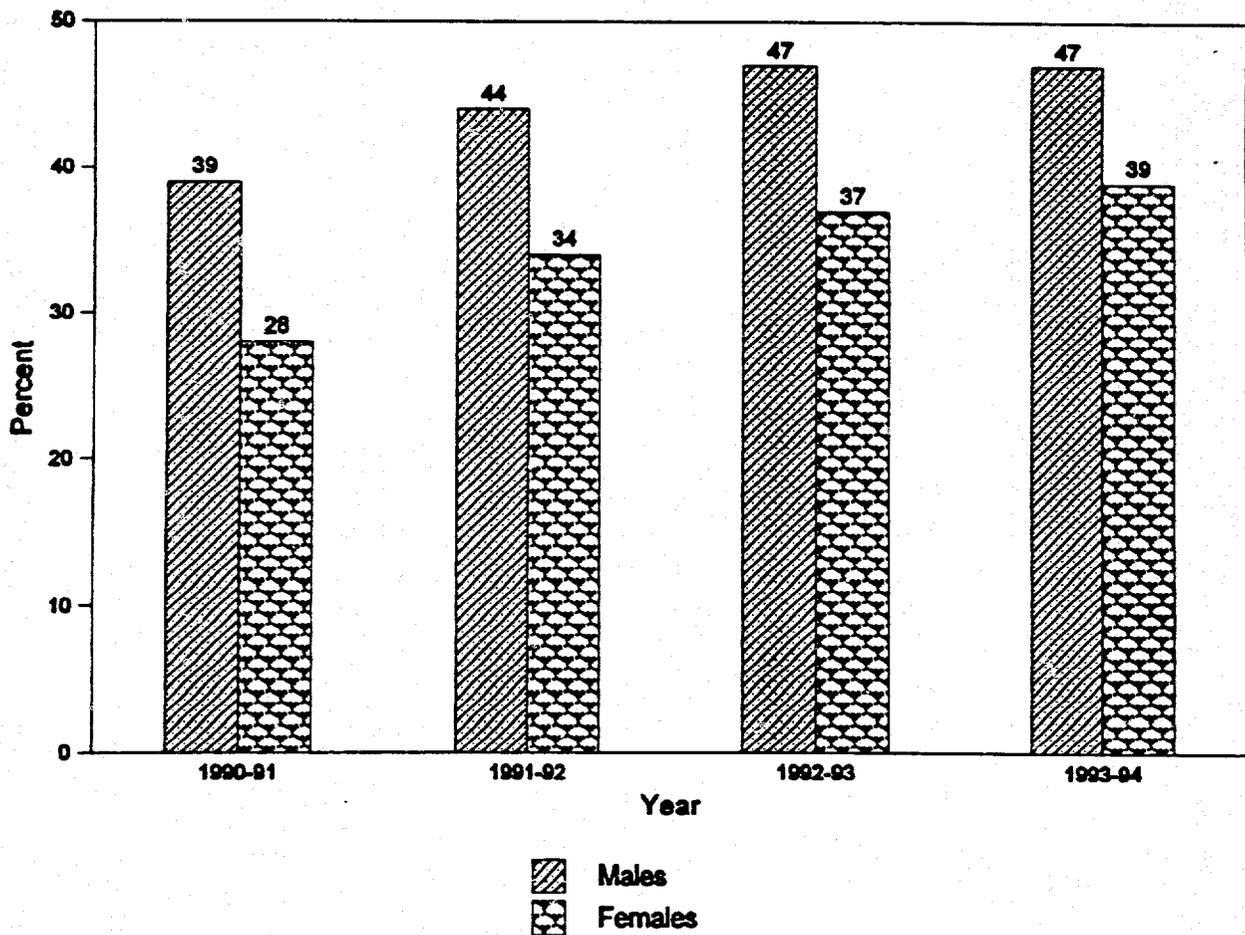


Figure 4.8. Completion rate for third grade, 1990-91 through 1993-94, Balochistan



4. **A Personnel Management System (PMIS)** was created and is currently in the pilot-testing phase.
5. **A Computerized Teacher Training Monitoring System** also has been developed and installed in the Curriculum Bureau.
6. **A Physical Inventory System** will be developed later this year following the completion of the Physical Conditions Survey.

Private-Sector Involvement — Frontier Education Foundation (FEF). The Frontier Education Foundation is now operational. It has received a contribution of Rs. 100 million from the provincial government and another Rs. 50 million from the PED Program. It has begun to process applications with the objective of encouraging girls' schools in rural areas.

Change in Service Rules. Service Rules have been changed to address the paucity of female teachers in disadvantaged areas, where a sufficient number of girls with middle- or secondary-level education are unavailable. These changes include lowering academic qualification of female candidates for primary teachers, relaxing age limits, and hiring retired male teachers to teach in girls' schools, wherever possible.

Balochistan Province

Bifurcation of Primary Education. The post of the Additional Director, Primary Education was established in March 1990, as mandated by the PED Program. Three years later in July of 1993, the Directorate of Primary Education in Balochistan was established. Since that time, field staff, DEOs, and SDEOs have received training in budgeting and planning, policy, and performance monitoring procedures.

Financial Support. The annual growth rate of the recurrent budget since fiscal 1990-91 has been approximately 18 percent, while the development budget has grown at a rate of more than 100 percent.

Balochistan Educational Management Information System (BEMIS). BEMIS has been operational, with computer cells set up in at least the central district in each division. Other progress made to date includes:

- ◆ Seven school censuses were completed during the past three-and-a-half years.
- ◆ A Financial Management Information System (FMIS) was developed and installed in the Directorate of Primary Education and in the Attorney General's office. The FMIS has a recurrent expenditure as well as a PLA component.

- ◆ BEMIS is also operational in the offices of the Secretary of Education and the deputy secretaries for development and administration.

Private-Sector Involvement. Habib Bank is supporting home schools for girls in the slum areas of Pishin and Quetta. These are schools in the homes of women who serve as primary teachers as well. Home schools have provided access to primary education which would otherwise have been denied to girls who reside in slums. The Balochistan Education Foundation (BEF) was established last year to encourage a government and private-sector partnership in setting up primary schools.

Changes in Service Rules. Teacher entry-level qualifications and age limits have been relaxed to enable more teachers to be hired for girls' primary schools. Service Rules have been modified to allow women to be promoted to senior positions.

Community Support Program. The Society for Community Support for Primary Education has been successful in helping remote rural communities to establish primary schools for girls and in identifying potential female teachers. The society has received support from the PED Program and other donors. Female teachers continue to be trained through mobile female teacher training units provided by PED.

TEACHER TRAINING AND SUPPLY

In both provinces, the supply of teachers has increased to meet primary enrollment targets. The gender disparity that existed prior to the beginning of PED in primary teacher supply has remained virtually the same.

Northwest Frontier Province

The number of male instructors in NWFP is approximately three times the number of female teachers. The problem of a paucity of female teachers in rural areas remains. To establish a basis for the rational distribution of primary teachers in the province, a study was conducted and a handbook prepared on regulations, practices, and incentives for teachers. Recommendations for change were also included.

Balochistan Province

In Balochistan, until 1992, there were six times more male than female teachers. This ratio declined to 5:1 in subsequent years. Mobility continues to be a major hinderance to improving the supply of female teachers. The Mobile Female Teacher Training Unit, therefore, took training into the village to the trainees.

Figure 4.9. Teacher supply, 1988-89 through 1993-94, NWFP

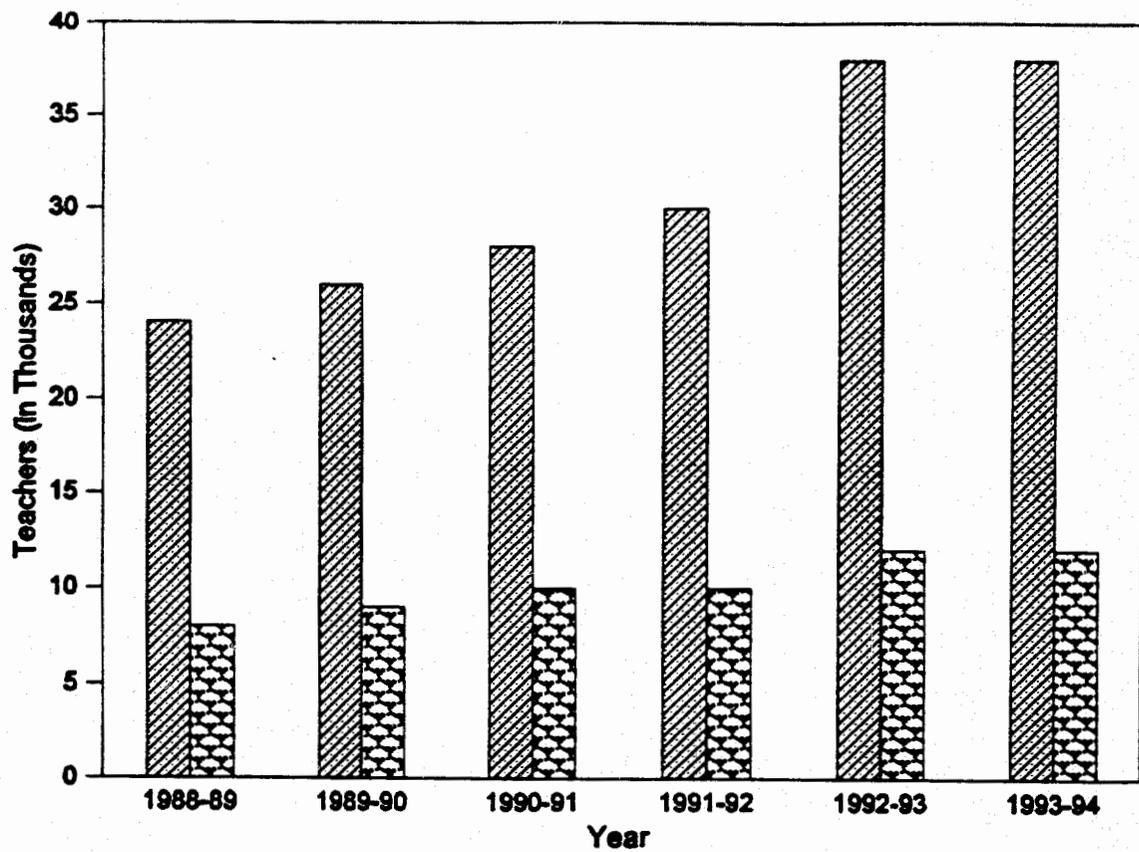
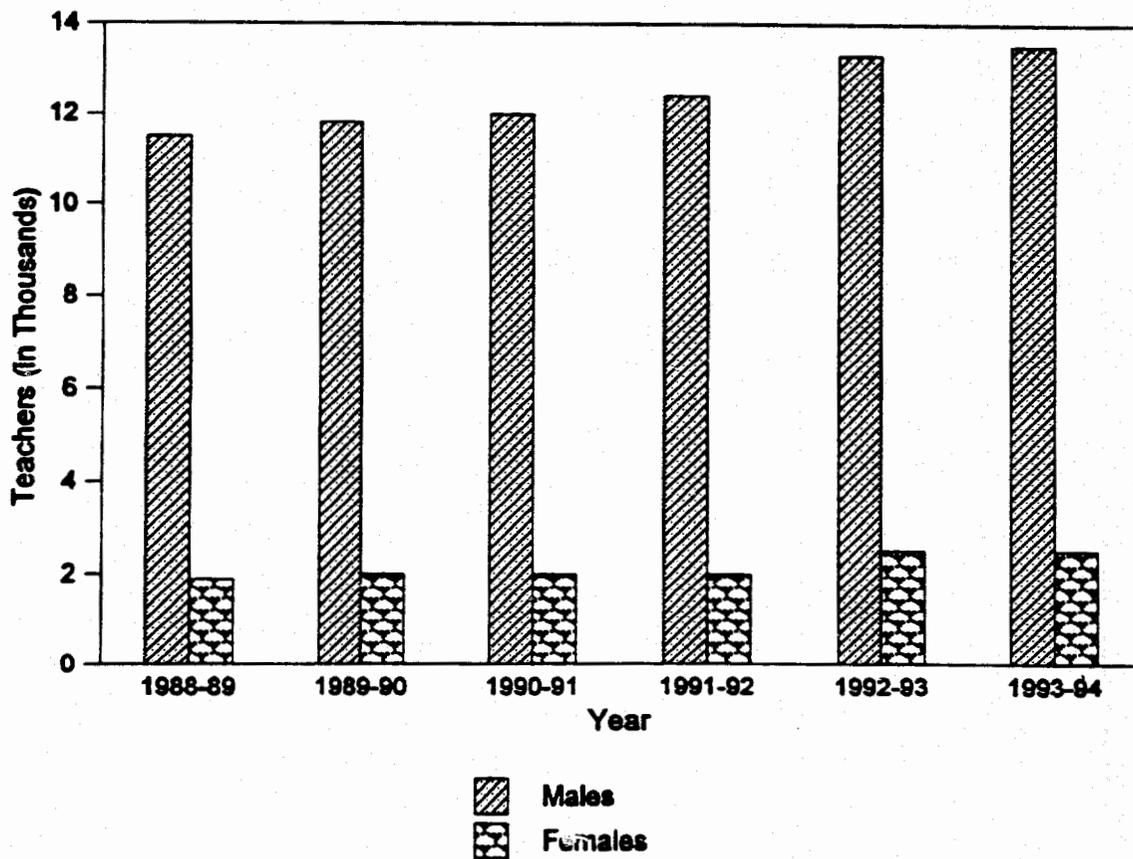


Figure 4.10. Teacher supply, 1988-89 through 1993-94, Balochistan



There has been an increase in the percentage of primary schools with less than 50 pupils per primary teacher in both provinces. The increase in primary schools for girls is far more significant in NWFP — 17 percent compared with 5 percent in Balochistan. These apparent improvements mask urban-rural disparities in teacher supply that are particularly stark in Balochistan. The table below illustrates the disparity.

Table 8

Percentage of Primary Schools with Pupil-Teacher Ratio of Less than 50 to 1				
Provinces	Percent of Boys' Primary Schools		Percent of Girls' Primary Schools	
	1990-91	1993-94	1990-91	1993-94
NWFP	75.0 %	91.3 %	65.0 %	85.0 %
Balochistan	68.0 %	85.0 %	76.0 %	81.0 %

At the start of the program, approximately 30 percent of the teachers in NWFP and more than 60 percent of those in Balochistan had no training and hence did not have the Primary Teaching Certificate (PTC). The percentage of PTC-trained teachers has increased in both provinces, as shown in Table 9. In Balochistan, however, the changes have been much more dramatic. The backlog of 8,000 untrained primary teachers has been completely removed through the Accelerated Teacher Training Program.

Table 9

Percentage of Certified Primary Teachers Trained				
Provinces	Percent of Male Primary Teachers Certified		Percent of Female Primary Teachers Certified	
	1988-89	1993-93	1988-89	1993-94
NWFP	73.0 %	86.9 %	32.0 %	86.0 %
Balochistan	67.0 %	77.6 %	43.0 %	72.0 %

Northwest Frontier Province

Instructional Supervision. In the NWFP, materials were developed, and learning coordinators (LCs) were trained to provide instructional support and supervision to primary teachers. The training activity also included master trainers.

PTC Training. To accommodate the large number of applicants seeking admission to GCETs, hostels of four existing GCETs (2 male and 2 female) have been extended, and three additional GCETs (1 male and 2 female) have been constructed. In-service training to certify primary teachers was conducted through the long-distance training course of the Allama Iqbal Open University.

Quality of Conventional (PTC) Training. Conduct of the teacher content knowledge study involved testing PTC trainees and in-service primary teachers regarding their content knowledge of fifth grade subjects. Changes were recommended and implemented in PTC courses.

Product Specific (In-service) Teacher Training. Primary teachers and master trainers received training in the use of new Kachi-Pakki instructional materials developed by the IMDC. The scope of the training was expanded to include generic teaching skills.

Introducing Changes in PTC Courses (Preservice Teacher Training). Training materials have been developed for GCET instructors and students that are: relevant to the instructional materials produced by IMDC, including Interactive English by Radio; emphasize content knowledge in mathematics, Urdu and Pashto; include techniques for teaching beginning language; and focus on classroom management and instruction, particularly in a multigrade environment. These materials have been introduced in GCETs, and the progress of trainees has been monitored.

Balochistan Province

Accelerated Primary Teacher Training ("Crash") Program. To remove the backlog of 8,000 uncertified primary teachers, a Primary Teaching Alternative Certificate (PTAC) Course was developed. This three-month intensive version of the nine-month conventional PTC course was conducted throughout the province during vacations. To implement the Accelerated Primary Teacher Training Program, subject specialists at the Bureau of Curriculum and Extension, secondary teachers, and headmasters of primary schools were trained to teach the accelerated course.

Mobile Female Teacher Training Program (MFTTP). The MFTTP was developed to increase the supply of female teachers in rural areas. This program coincides with the efforts of the Community Support Program (CSP) to identify girls in villages to be trained. The Mobile Female Teacher Training Unit uses the PTAC course to train girls at a residential site close to their homes. Since 1992, 120 posts have been reserved annually for MFTTP candidates. To date, 576 girls have been awarded the PTC as a result of this program.

Quality of Training — The Faculty of Education (F.Ed) Program. This program was designed to replace the PTC course. It incorporates features of three courses: the PTC course, the Certified Teacher (CT) course for secondary school teachers, and the Faculty of Arts (FA) for higher secondary (grades 11 and 12). More importantly, its emphasis is on classroom realities. This planned program will be implemented during the next fiscal year.

CURRICULUM AND INSTRUCTIONAL MATERIALS DEVELOPMENT

Northwest Frontier Province

Studies of Classroom Realities. Prior to the development of instructional materials, studies of the Kachi grade and multigrade environment in primary schools were conducted. Existing instructional material had ignored these realities. Considering that the largest primary enrollments were in Kachi and most schools consisted of multigrades, the studies provided critical information relevant to instructional materials development.

Establishment of Instructional Materials Development Cell (IMDC). The IMDC was established in October 1991 in the Directorate of Primary Education in NWFP. A 13-member staff was recruited from promising young primary teachers with high academic qualifications. They are now well-trained subject specialists and researchers for the IMDC.

Development of Instructional Materials. This process consists of writing the student's textbook, an annotated teacher's guide of the textbook, and criterion-referenced test items for field-testing the new material. To date, all three components have been developed for the Kachi, Pakki (first grade), and second grade in the following subjects: Urdu, Pashto, and integrated mathematics and science for Kachi; mathematics, integrated Urdu, science, and social studies; and integrated Pashto, science, and social studies for Pakki and second grade. The materials for third grade are currently being written.

Interactive Radio Instruction (IRI) — English-in-Action Program. Instruction in English by radio commences in third grade, the earliest stage considered to be conducive to learning English. Recordings of lessons, accompanying workbooks for children, and teachers' guides have been completed for third and fourth grades, which correspond to levels one and two of the IRI program. The materials for the final level, level three, are being prepared.

Supplementary Student Learning Materials. Plastic picture blocks with matching letter and number blocks have been developed for Kachi and Pakki. Supplementary reading materials for second through fifth grades have also been prepared.

Teacher Support Materials. Alphabet and number friezes have been developed on cloth so that they can be washed. An alphabet chart stressing the phonics of the two languages has been prepared which includes beginning, medial, and ending forms of letters in different colors to

facilitate writing. Geographical maps showing the physical characteristics of the province have been developed as well.

Balochistan Province

Establishment of the Balochistan Instructional Materials Development Cell (BIMDC). The BIMDC was established in August 1992, with a staff of four subject specialists. Since then, primary teachers have been attached to BIMDC for preparing primary textbooks.

Development of Preliteracy Materials. Flashcard kits in Urdu have been prepared for beginning Kachi students. They have been field-tested in 16 schools in two districts and revised. A complete set of preliteracy materials includes 108 flashcards and 24 bingo game cards with 216 game pieces. To date, 8,000 sets have been produced and distributed throughout the province. Another 8,000 are being produced.

In-house Desktop Publishing Facilities. An important accomplishment of BIMDC has been the purchase and installation of desktop publishing equipment, including Urdu word-processing capabilities. BIMDC staff have undergone extensive training in the use of the equipment and the techniques of layout and design. All instructional materials prepared by BIMDC commencing from the preliteracy flashcards have been printed to a prepress quality using desktop facilities.

Development of New Printing Procurement Procedures. The BIMDC has developed sample bidding documents and a tender notice in an effort to streamline instructional materials publishing. The tender notice will be available for nationwide competitive bidding. Bidders will be required to give samples of their work using the prepress materials given by BIMDC and detailed information regarding production costs, time schedules, and so forth.

Instructional Materials Development. Textbooks and annotated teachers' editions have been developed for Kachi and Pakki in the following subjects: Urdu and integrated mathematics and science for Kachi and mathematics and integrated Urdu, social studies, and science for Pakki.

Illustration Resource Library. Original and culturally relevant illustrations were prepared for Kachi and Pakki textbooks. More than 500 illustrations, including cartoons, have been developed. These have been compiled into "clip art" books and distributed to all instructional materials development centers in Pakistan.

Northwest Frontier and Balochistan Provinces

Primary Curriculum Document. At the request from Curriculum Wing, Islamabad, Balochistan and NWFP IMDC staff reviewed and revised the existing primary-level curriculum. Instructional objectives have been improved so that learning outcomes can be measured. An important feature is the inclusion of Kachi in the curriculum, thereby according official recognition to Kachi.

Testing. Field-testing of instructional materials and achievement testing of third and fifth grade students is a significant accomplishment of the PED Program in NWFP. For the first time, the accountability of supervisors and teachers, monitoring of learning outcomes, and effectiveness of instructional materials have been introduced into the education system.

Northwest Frontier Province

Field-Testing Instructional Material. Kachi materials were tested in more than 750 schools for one instructional year and revised several times. They are now ready for provincewide distribution. Pakki materials were introduced for testing in the same schools after the Kachi material had been taught to the children. The testing of both Kachi and Pakki materials has been completed. Criterion-referenced test items were also developed for "English in Action." Radios were distributed in 300 experimental schools, and the testing of third grade materials has been completed. Fourth grade materials will be field-tested in September 1994. Prior to testing students, supervisors had to monitor the use of the new materials in the experimental schools. This approach required visiting schools at regular and frequent intervals, filling out observation questionnaires, and interacting with the teachers. Recently, IMDC conducted a workshop for supervisors on evaluating and analyzing test results. Given that field-testing extends to all districts in the province a major area of weakness in the system, namely, instructional supervision, has been addressed.

Achievement Testing — NEAP. To test children's achievement at third and fifth grade levels, the Northwest Educational Assessment Program (NEAP) was established. A pool of criterion-referenced test items in Urdu, Pashto, mathematics, and science were developed based on the primary syllabus currently in use. Using a sample of these items, tests have been administered to a random but representative sample of third and fifth grade students in the province. The results were scored and analyzed and feedback was given to district education officers, subdistrict education officers, and teachers so that remedial measures could be taken. NEAP is now being established as a national system. Testing has already been conducted in Punjab and Balochistan. It will commence soon in Sind.

Balochistan Province

Field-Testing Instructional Materials. Field-testing of Kachi and Pakki material will commence this year in 90 schools throughout Balochistan, which are representative of gender, ethnic, and geographical characteristics of the province. Monitoring of the use of instructional materials, testing, revising, and retesting will follow the same pattern as in NWFP.

CONSTRUCTION

Enrollment increases have translated into an increased pace of school construction and enhanced teacher supply. In both Balochistan and NWFP, prior to program intervention the annual increase

in the number of schools constructed was negligible. After 1988-89, the situation changed significantly. Since 1992-93, 60 percent of the schools built were for girls.

ACCOMPLISHMENTS

1. **Separate Directorates.** The mandated goal of having separate directorates solely responsible for primary education has been achieved by setting up the institutional framework for sustainable development of primary education in both provinces.
2. **Personnel.** Capable officers have been appointed in the positions relating to the four component areas. This is a continuous activity because resistance from the bureaucracy has to be overcome.
3. **Improved Planning.** Planning has evolved from being TA team-centered to team-assisted. Initially, the annual plans had to be written by the TAs, but now government officials require only their assistance and do the actual writing themselves.
4. **Successful Follow-on Project.** Balochistan has been successful in obtaining funding from the World Bank, and the follow-on project meshes well with the existing project.
5. **Financial Support.** Increased provincial commitment to primary education in the form of mandatory increases in recurrent financial expenditures has been provided by the Balochistan and NWFP governments, and support targets have been exceeded.
6. **Gender Equity.** By increasing and strengthening women's participation in the public and private sectors as well as within the program itself, PED has been successful in decreasing gender inequities in the education work environment. This accomplishment is evidenced by the number of women working for the program both on the government and technical side.
7. **Changes in Service Rules (Balochistan).** Teacher entry-level qualifications were relaxed so that more teachers for girls' primary schools could be recruited. To ensure sustainable quality output from the BEMIS, Service Rules were changed to allow 50 percent of all new appointments to be made by direct recruitment and to stop all transfers out on a regular basis because this practice hampers long-term institutional development. Promotion of women to Grade 19 was not possible because of the way in which service rules were structured. It took a full year to implement a change, but a woman has now been promoted to Grade 19.
8. **Job Descriptions (Balochistan).** Job descriptions for DEOs, SDEOs, ASDEOs, and LCs have been developed in collaboration with the government. These descriptions have helped in assigning of duties and identifying redundancy. An officers' guide has also been compiled as a resource document for officers of PED.

9. **EMIS.** Education MIS are fully operational in both provinces and school censuses have been conducted regularly. Data generated have been accepted as reliable by the government and in many cases has been used as the standard to compare data from other sources. Data-collection activities have been expanded to meet increasing requirements.
10. **Decentralization (Balochistan).** Decentralization of planning, budgeting, and accountability to the district and subdistrict levels is taking place in Balochistan and is a direct result of the consolidation of planning and administration by the DPE.
11. **Education Foundation.** The need to mobilize the private sector has been felt because the governments in both NWFP and Balochistan are unable to meet the resource requirements for expanding school places and increasing girls' enrollment. Education foundations have been established in both provinces and the function of these foundations is to fund private-sector initiatives for primary education.
12. **Balochistan Girls' Scholarship Program.** The Girls' Scholarship Program has been started in Balochistan with the objective of developing low-tuition private schools in the urban and rural areas.
13. **Community Participation (Balochistan).** The advantage of using a grass-roots approach for increasing girls' access to schooling has proven to be extremely effective in rural areas, which is why an independent NGO has been set up (SCSPEB) with the objective of promoting primary education for girls in Balochistan. The community support process is a mechanism by which society creates a capacity with the community, NGOs, and the government to establish an effective system of primary education at all levels as responsible partners.
14. **Training.** Relevant training programs have been conducted to develop the management skills of government officials who have a direct bearing on the program. These training programs have been conducted in country as well as abroad.
15. **Donor Coordination.** Prior to the inception of the PED Program, donor activities in the primary education were often overlapping. Since the establishment of the DPEs, all donor activities are coordinated through the DPEs, and resources are being used effectively.

CONSTRAINTS

1. **Provincial Bureaucracies.** The seniority-based system of promotion, lengthy and complicated procedures required to make change, and resistance to change are characteristics of the provincial bureaucracies that hindered development. Delays in poor-quality appointments adversely affected the planning capacities of both DPEs. This is particularly true of the NWFP where the bureaucracy is rigid and rule-bound, and there

are four departments at the provincial level alone that are involved in the planning and administration of primary education.

2. Alteration in the time frame established for the program has meant that many of the planned changes could not be achieved.

LESSONS LEARNED

1. The necessity for institutionalizing development gains so that the changes are sustainable when outside funding disappears has been recognized by the government, particularly by top-level administrators.
2. Using the correct approach is critical to the success of any development activity. The project or program approach must be applied keeping in view the nature of the activity and the environment in which it is to be carried out.

Chapter 5

Administration and Management



5. Administration and Management

This chapter of the report discusses the administration and management components of PED and highlights their contribution toward attaining program goals and related policy reforms. As delineated in the Program Assistance Approval Document of June 1989,

The Primary Education Development Program was designed to help establish a foundation for sustained economic and social development in Balochistan and Northwest Frontier provinces by encouraging policy reforms in education. The program goal was to enhance the institutional capabilities of the Balochistan and the NWFP governments to formulate and implement policy that improves the access, equity, and quality of primary education.

CONDITIONS PRECEDENT

The Program Grant Agreement of same date adds several "Conditions Precedent" that must be met by the participating governments. They require that:

- ◆ Each province establish a separate steering committee composed of, at least, the secretaries of education, planning and development, and finance empowered to negotiate annual action plans and policy and performance benchmarks with A.I.D. and to conduct semiannual evaluations of progress.
- ◆ Each province prepare written, agreed-upon benchmarks and a work plan (including activities and budget).
- ◆ Each province meet minimum annual budget increases for primary education (5 percent in NWFP and 8 percent in Balochistan).

It is sufficient to say, from an administrative and managerial perspective, that all Conditions Precedent were met annually by both provinces. The steering committees and education departments performed effectively in promoting program developments.

To achieve the program goals, a number of actions were either suggested in the PAAD or required as covenants by the Program Grant Agreement of June 1989. These actions were to:

1. Establish directorates of primary education.
2. Develop Education Management Information Systems (EMIS), and encourage the use of data in improving planning processes.
3. Enhance the capacity of the directorates through improved procedures and training.

4. Facilitate the promotion of female employees.
5. Use participants who receive long-term training.
6. Improve financial planning and reporting.
7. Involve the private sector.

An additional significant activity, which might be viewed as a natural extension to involving the private sector, was added as the program evolved: to encourage community participation.

IMPLEMENTATION FACTORS

To help the provinces address the foregoing objectives, a long-term Technical Adviser (TA) was hired for each province. The technical advisers in both provinces were assigned significant additional responsibilities which, at times, limited the attention that the technical advisers could give to implementing the multiple efforts required. The NWFP adviser also served as Chief-of-Party, and the Balochistan adviser also served as Team Leader.

Effective utilization of short-term consultants (international and local) and on-the-job training of locally hired professional and administrative personnel contributed to the successful implementation of this program element. A residual benefit is that this locally hired and trained staff, which assumed responsibilities beyond those of their peers, will remain in place and continue to support primary education and human resource development efforts in the provinces long after the completion of the contract.

The two provinces differ in terms of their organization and culture. Further, each province was at a different state of readiness for development when the program was initiated, and therefore, as development evolved the pace and path in each was distinctively different. Fortunately, the program approach, which involved provincial steering committees with the authority to negotiate annual benchmarks and annual work plans and conduct regular semiannual reviews, permitted the provinces to develop in the way best suited to each. The Government of Balochistan substituted the annual work plan of the PED Program for the standard PC-1 process (Planning Commission's Proforma for Development Projects), which streamlined the implementation process. To the credit of the USAID office of Human Resource Development (HRD), the agency did not demand that the provinces adhere to one rigid plan for both of the provinces. HRD staff also actively participated in steering committee meetings.

The program goals have remained the same for both provinces. As described in the paragraphs that follow and elsewhere in this report, both provinces have made significant advances in all areas. Even more significant, the provincial organizations have been enhanced and policy changes implemented that will ensure that the gains that have been made will be sustained. Given the differences between the two provinces, in both environments for development and in the patterns

of implementation, the developments, problems, and needs in each are presented as separate case studies. The summaries consolidate the common and combined experience and accomplishments.

NWFP ADMINISTRATION AND MANAGEMENT CAPACITY-BUILDING AND POLICY REFORM UNDER PED

CASE STUDY

Prior to the start of the PED Program, primary education in NWFP was the largest component of the Directorate of Schools, which was responsible for all precollege education. Despite its size, however, it was the least well-managed and the least well-supported element. This situation existed despite the fact that three projects were under way in NWFP funded by donors to improve one or another aspect of primary education.

The World Bank had funded the Primary Education Project II (PEP II) which had a subproject in each province. It was organized and managed by a Project Implementation Unit (PIU) staffed by Pakistanis on leave from the Education Department but operating independently, outside the structure of the department and not integrated into its regular operations.

The PEP II was to build 1,000 classrooms to increase the capacity of overcrowded schools and create the post of learning coordinators, who were to be responsible for the instructional supervision of classroom teachers. In addition, each PIU was to write a number of learning modules — teachers' guides, which the learning coordinators were to teach to the in-service teachers in the ten PEP II districts in NWFP.

The Norwegian government had made a grant to the NWFP Textbook Board to increase its skills and knowledge in preparing textbooks for primary schools. UNICEF was funding a Primary Curriculum Reform Project in each province, though by 1990 no actual curriculum development work had been done despite the project's having been in existence since 1988. The GTZ had funded a primary education project in NWFP for Afghanistan refugees, developing instructional and training teachers in their use. In time, it was extended to serve the Pakistani primary schools in the communities near which the Afghani camps were located.

None of the four projects, except the German-funded project, had any consultant help. The donors thought that the problems of primary education could or would be solved simply by providing money, assuming that people with the knowledge and skills needed to implement the intended improvements existed in the province and could be appointed to serve on the projects' PIUs. Unfortunately, this was a more optimistic view of the educational improvement potential in the Education Department than the actuality proved to be once the projects were funded. Project implementation either lagged or was nonexistent and when it did the results were not

integrated into the regular operations of the department, nor were they disseminated to those schools outside the projects boundaries.

Hence, as USAID designed the PED, it place major emphasis on a program approach — one in which the intended improvements would be carried out by the Education Department's regular staff, augmented by a technical assistance contract team of resident experts for the component elements of the intervention activity — not by an independent PIU, operating on its own.

And, therefore, the PED goals were "to enhance the institutional capabilities" of the NWFP government "to formulate and implement policy reforms" ... to improve "access, equity, and the quality of primary education" in the entire province not just in the ten districts in which the PEP II operated or the one district in which the UNICEF projects operated.

In addition, the PEP was a comprehensive program, not a piecemeal approach to school improvement, with components for school-building, improving the management and administration of schools, developing curriculum and instructional materials, training teachers, both in-service and preservice, and establishing a computerized educational management information service.

ACTIONS

1. Establish directorates of primary education.

In pursuit of the program goals, the provinces and USAID agreed that it was necessary to concentrate attention, resources, and effort on primary education, which had been the "stepchild" of education prior to the inception of the program. In particular, it was important to provide more efficient and effective overall management of primary education than had been the case in the past. The 18 school districts in NWFP were grouped into six divisions, each headed by two division directors, one for the male schools and one for the female schools. Under the division directors, district education officers were responsible for the secondary schools (grades 6 through 12) and subdistrict education officers were responsible for the primary schools.

Following an organizational study of how preuniversity education should be organized in NWFP, a plan was formulated to bifurcate the School Department into a Directorate of Primary Education and a Directorate of Secondary Education. Following almost a year of discussion and planning, the NWFP established the Directorate of Primary Education in June 1990, which became operational on January 1, 1991. During the organizational period, the structure of the field offices was established. The position of Division Director was abolished, because most people in the department felt they acted primarily as "post offices," transmitting messages to and from their field officers and the top department staff in Peshawar.

District education officers (DEOs), male and female, were appointed to be the top field officials in charge of primary education. This arrangement placed them above the existing subdistrict

education officers (SDEOs), who had been solely in charge of primary education prior to the establishment of the new Directorate. Below the SDEOs offices, the organizational structure and function remained the same. Just below the SDEOs were assistant district education officers (ASDEOs), who were administrative supervisors in charge of a set of primary schools, and learning coordinators, who were theoretically responsible for the instructional supervision of teachers in from 15 to 20 schools.

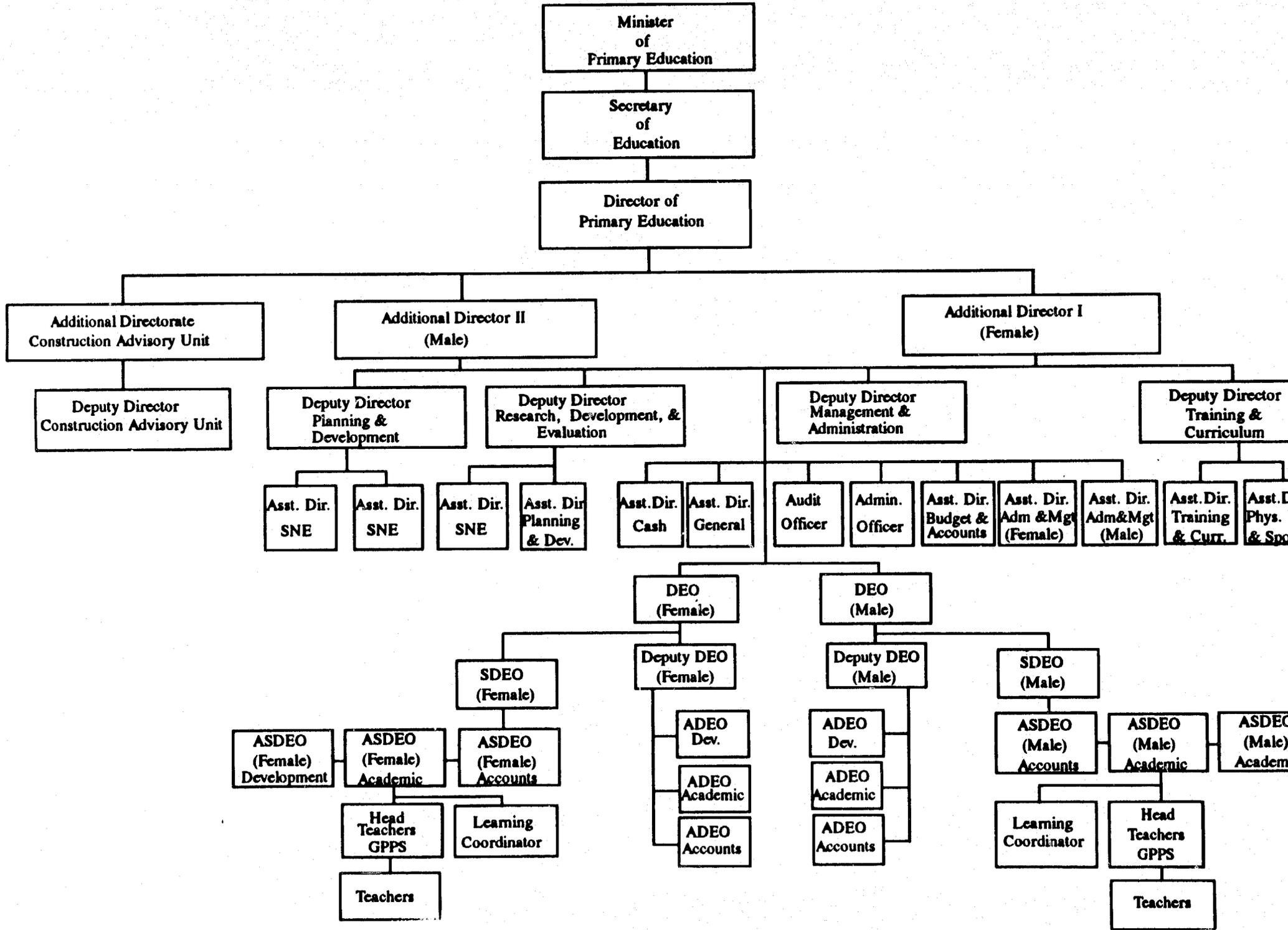
The Directorate of Primary Education headquarters, in Peshawar, began operations officially on January 1, 1991, the day on which the Directorate became officially responsible for managing 55,000 employees and approximately 18,000 schools.

It is a matter of pride to the Director that the Additional Director I, who is the second in command, is a female as are 6 of the other top officials in the headquarters staff out of a total of 17. Moreover, they supervise both male and female staff, though further down the chain of command. In the field, the male and female DEOs still supervise only the schools of their same gender.

Responsibility allocations and job descriptions were developed by PED technical assistance in collaboration with staff of the Directorate of Primary Education and officially approved. An organizational development study of the offices of the DEOs and SDEOs, with a view to reordering the functions of each and providing training for new job responsibilities will be implemented during fiscal 1994-95.

In addition, at the urging of World Bank and other donor agencies, a feasibility study was conducted of changing to a single, integrated administrative system in the field — in part to coincide with the plans in the province to foster the continuing growth of coeducation in the primary schools. In fact, many girls now enroll in boys' schools. Parents are encouraged to send their children of either gender to the nearest primary school, regardless of the gender title of the school. In one district, female enrollment in boys' schools is 43 percent of the total.

Figure 5.1. Current plan of organization, Directorate of Primary Education, NWFP



2. Develop educational management information systems (EMIS) and encourage the use of empirical data to improve the planning process.

A computerized Educational Management Information System (EMIS) was established and has been operational since the Fall of 1990, when the first EMIS-managed Annual School Census was conducted. The EMIS was created to obtain, analyze, interpret, and provide accurate, valid, reliable, relevant, and up-to-date educational information to education officials to enhance their planning and educational management abilities.

Computers, air-conditioners, and related peripheral equipment and furniture have been provided by USAID and installed by PED technical assistance experts, who also trained personnel in their use. All male and female district education offices, secondary Directorate divisional offices, the secondary Directorate EMIS cell, and a cell in the Secretary's offices under the direction of the Chief Planning Officer, Education Department, have been provided equipment and training and are now operational in a distributed data system.

In addition to the Annual School Census, EMIS personnel and consultants have developed:

- ◆ A computerized Financial Management System, now being implemented in DEO offices by their financial officers
- ◆ A computerized Personnel Management System, now being implemented in the DEO offices as their personnel are trained
- ◆ A computerized Teacher Training Tracking System, operated by the Bureau of Curriculum (which is in charge of primary teacher training).

Personnel will also develop a computerized Facilities File showing the physical condition of every primary school in their district and a five-year maintenance and repair schedule for each. This activity will be carried out once the Physical Conditions Survey is completed, probably in late Fall of 1994.

Additional computers were purchased in fiscal 1993-94 by the Directorate of Primary Education to equip all of the subdistrict education offices as well. Installation of the computers and training for operators will take place during the 1994-95 school year. The Directorate of Primary Education's EMIS and its district or subdistrict offices are responsible, therefore, for:

- ◆ Collecting, analyzing, and reporting data from the Annual School Census
- ◆ Operating the computerized Financial Management System
- ◆ Operating the computerized Personnel Management System
- ◆ Operating a Facilities Inventory System.

They will have access to the Teacher Training Monitoring System operated by the Bureau of Curriculum, for use in selecting teacher trainees and in hiring teachers immediately following their training.

In addition, in order for educational administrators and managers to gain reliable empirical data and knowledge of how well their system is functioning at its main goal, teaching children, the Northwest Educational Assessment Program (NEAP), was created. The NEAP has developed a pool of test items that mirror and test the content to be taught in math, science, Urdu, and Pashto in grades three and five. Using a sample of third- and fifth-grade children from schools in each subdistrict. The tests are then computer scored and analyzed to determine in which subareas of the content pupils do least well (for example, operations with fractions or word problems in math).

The results, expressed as class averages, are then reported to the responsible officials in the districts and subdistricts, with suggestions for ways in which they may improve instruction in the schools. The results are also reported to the Instructional Materials Development Cell (IMDC), which then develops targeted instructional units for in-service teacher training and which will develop additional learning materials for pupils in the area of greatest difficulty as revealed by the tests.

The EMIS is one component of the Division of Research, Development, and Evaluation in the Directorate of Primary Education. It provides technical assistance in research design and technical supervision, as needed, and in the conduct of research and evaluation and provides data processing. All of the activities intended to improve teaching and supervision, to produce new and improved instructional materials, and to develop the EMIS are based on research studies conducted in NWFP.

The most important of the research studies involve:

- ◆ An organizational study on how to create and organize the Directorate
- ◆ An organizational study of the Bureau of Curriculum on how to improve its teacher training activities and its curricular responsibilities
- ◆ A study of all of the rules and regulations concerning personnel — posting, transfer, and Service Rules — with recommendations to correct anomalies and make the system more efficient and responsive to current conditions
- ◆ A study that examined the problems of teaching Kachi pupils
- ◆ A study that examined the problems teachers face in multigrade teaching, which their own training had not prepared them for and which is required in at least 80 percent of the primary schools

- ◆ A teacher content-knowledge study, measuring the achievement levels of preservice teacher trainees and teachers in-service on fifth-grade tests in math, science, and Urdu. (These are the same tests used to test a sample of fifth-grade pupils in the Northwest Educational Assessment Program (NEAP) and are criterion-referenced to the fifth-grade textbooks.)
- ◆ A study of how much improvement primary PTC students made during their one-year in the GCETs preservice training in content knowledge of the math, science, and Urdu taught in the fifth grade.
- ◆ A study of what teaching practices successful Pakistani teachers used to enable their pupils to score almost twice as well on achievement tests in math, science, and Urdu as do the students of less effective teachers.

In addition, and most important, each new or improved method or innovation is thoroughly evaluated before being adopted for large-scale use.

3. Enhance the capacity of the directorates through improved procedures and training.

In-country training programs in new management methods and procedures, ranging from such mundane concerns as "how to manage paperwork in the offices" to the more complex issues of "how to use EMIS data in long-range planning," have been conducted during the four years of the program for DEOs, SDEO, their additional directors, planning and development, and top Directorate staff.

Study tours to observe programs in other developing countries and, where appropriate, in the United States, have also been conducted. Personnel have been sent for short courses in planning and information systems development and for master's degree training in planning, administration, and research.

Directorate officials, DEOs, and SDEOs have been trained in both general and job-specific management skills and knowledge. ASDEOs and learning coordinators — those in the system most directly responsible for the day-to-day operations of the schools — have been trained to train teachers how to use effective teaching practices and new instructional materials. They also have received training in classroom observation skills and in interviewing teachers as part of formative evaluation of the effectiveness of new instructional materials introduced into their classrooms.

The data on pupil achievement and critical indicators of system efficiency derived from the Annual School Census, such as dropout rates, repeater rates, gross productivity of the schools, and other critical indicators form the empirical databases for the School Improvement Program. This is a district, subdistrict program in which DEOs and SDEOs have been trained to set targets for increasing enrollment and pupil achievement and to develop action plans to achieve those targets each year.

The DEOs and SDEOs will be monitored on the achievement of their targets each year, with a new set of targets and action plans for their achievement established each year for the succeeding year.

This iterative process enables the Directorate to develop and use a "self-correcting system," for school improvement — one based on obtaining feedback on enrollment by gender, on the results of instruction, developing programs to remedy the known enrollment deficits and instructional defects, applying the programs on a district basis, again obtaining feedback of the results of the interventions, and continuing the cycle.

4. Facilitate the promotion of female employees.

As mentioned, the Directorate has employed females in top management positions from the beginning. Although no official gender bar exists generally custom has favored appointing males to the top positions. That practice, however, seems to be changing. The new Additional Secretary II, for Education, is a female who has been transferred to the post from the position of Additional Secretary of Finance.

All training has been equally provided to females, along with males, and they have been equally treated during study tours, though not in long-term M.A. programs abroad because very few could pass the TOEFL, even after they had participated in an English language training program. In addition, most responsible female officials are married and find their family responsibilities make it impossible for them to be away for a year or two.

A new development has been mentioned previously — the idea of disbanding the current dual gender-based set of field male and female offices, with male and female DEOs, SDEOs, ASDEOs, and learning coordinators and replacing them with a single administrative system. The feasibility of implementing the idea has been investigated by two Pakistani consultants. Their report and recommendations have been provided to the responsible authorities in the government for their consideration. What impact this new organizational structure might have on opportunities for jobs and promotion for females should it come into being is strictly conjecture until the situation is better defined.

5. Use participants who receive long-term training.

All of the employees of the Directorate of Primary Education who have received M.A. degrees in the United States are again employed by the Directorate and are in positions of advanced responsibility. One is now Deputy Director, Planning and Development, in the Directorate. One will be appointed to the position of Deputy Director, Training. One, a female, will be appointed Assistant Director, Research, and one has been promoted to DEO. In each case, they are using skills and knowledge they received in their training.

6. Improve financial planning and management.

As mentioned in the section on the EMIS, a computerized Financial Management Information System has been developed, debugged, tried in experimental sites, and revised and is now in use in the headquarters and the DEO's offices. This coming year, it will be installed in the SDEO's offices. The system has also been studied by a Pakistani expert, who has made suggestions for making it more efficient. Those modifications are to be made during the next fiscal year.

7. Involve the private sector.

The Frontier Education Foundation (FEF) has been established for more than a year and is now operational. It has received funds from the province as well as from USAID. Funding promised from the federal government has not been forthcoming. Current plans of the donor group that plans to continue the Primary Education Program from 1995 through the year 2000 are to provide funding to the FEF, in particular for a program to support the development of private community schools for girls in rural areas. A census of private schools is under way and a study has been made to locate as many as possible of the nongovernmental (NGOs) and community-based organizations (CBOs) in NWFP that might be interested in organizing community-based school programs in the province. Armed with these data, and the census of existing private schools, the FEF is in a position this fiscal year to present a program to encourage and support the development of private community-based schools.

8. Encourage community participation.

UNICEF, with the active participation of, and co-funding by, the PED Program is in the process of establishing 90 community schools, 30 in each of three districts, Karak, Nowshera, and Malakand. On the basis of an evaluation of the success of these efforts, the FEF intended to support the creation of 250 private community schools. The Directorate will also encourage a similar development of additional community-based schools in the other districts of the province.

In each case, there will be a Village Education Committee (VEC) appointed as the responsible agent for the creation of the school and for its supervision, repair, and maintenance. The Education Department had requested that VECs be established in every village with a primary school, but the planned composition of the committee has precluded their appointments so far. The composition called for members of the Provincial Assembly and other important elected officials to be members of each Village Education Committee, clearly an impossibility if the VECs were ever to become operational. Their composition is now being rethought.

**BALUCHISTAN ADMINISTRATION AND MANAGEMENT
CAPACITY-BUILDING AND POLICY REFORM UNDER PED**

CASE STUDY

The Primary Education Development Program in Balochistan was initiated in an environment that barely acknowledged primary education. The Education Department was staffed by field officers who had been promoted from the ranks either directly as a result of seniority or with the assistance of a significant political push. No primary schools had been built during the year prior to PED's inception in 1990. The budget for primary education was regularly redirected to either secondary education or to colleges. The educational information system consisted of 129 different aggregate reports submitted from varying sources that seldom included the same data.

Primary school teaching posts established in rural areas were regularly "attached" and reassigned to more desirable urban areas or given to individuals who had no intention of entering the classroom. The annual development budget and donor programs were too often viewed by officers as an opportunity to enhance their own personal situation. The rule of the provincial ministers was almost absolute, followed closely by the Senior Education Staff Association in Balochistan and the Teacher's Union.

Laissez faire is an apt term to describe the educational administrative system in place in Balochistan and in NWFP prior to 1990. Tragically, officials viewed government schools as a place for the children of common people and not as centers for quality education. Few, if any, officials of the education departments have children attending these schools.

The World Bank funded a Primary Education Project II (PED II), which was ineffectual. The Additional Chief Secretary (development) and other senior officials wished to close the project and stop the flow of funds. The World Bank was also prepared to terminate the project. In general, Balochistan's educational development programs were not being carried out effectively.

In February 1991, during the evacuation for the Iraq War, a delegation from USAID and the TA team approached the World Bank concerning possible continuation assistance for PED following the anticipated USAID cutoff due to the Pressler amendment. The World Bank cited the failure of the PEP-II as the reason for being disinclined to do so. When bank officials visited Balochistan in May of that year and saw the early progress and attitudinal difference resulting from the PED Program approach, however they reconsidered. In 1992, the PEP II PIU was closed, and responsibility for completing the construction of schools was given to the Additional Director, PED. Beginning in June of 1993, a \$106.0 million U.S. credit from the World Bank became available to continue PED Program developments in Balochistan.

In March 1990, the post of Additional Director, Primary Education was established in response to a condition precedent required for the release of funds under the PED grant agreement. The Additional Director continued to also fulfill his responsibilities as Deputy Director, Planning for the school directorate. The Administrative and Management Technical Adviser and PED Team Leader arrived in Balochistan July 6, 1990 having been preceded by the Teacher Training TA one month earlier.

It is significant to note that three important activities did get under way in early 1990-91. By October 1990, Balochistan Province was able to conduct its first school census, the first phase of the human resource survey also was completed, and the Female Mobile Teacher Training was begun to train rural females to become teachers. Today, there is an effective Directorate of Primary Education (October 1993) having full administrative and fiscal authority, and the PED is being cited as a development model for other human resource systems in Balochistan. The Mid-term Evaluation of PED Program, which was completed in May of 1993, stated in the executive summary that: "Institutional development and management and administrative structures have been developed for policy reform. Basic program alterations seem not to be needed, ..."

The needs in Balochistan remain large, and its economic and political problems continue to work against rapid progress. The province seems, however, deeply committed to improving its primary education system. To do so requires that every effort continues to be made to "enhance the institutional capabilities of Balochistan...to formulate and implement policy that improves access, equity, and quality of primary education."

ACTIONS

1. Establish directorates of primary education.

As in NWFP, primary education in Balochistan in 1990 was the "stepchild" of education — the least well-managed component of education and the component to which the least attention was paid. For these reasons, it was essential that a directorate with full administrative and fiscal authority be established. Moreover, the Program Grant Agreement between the governments of Pakistan and the United States required: "That within one year...the Education Department of the Balochistan Province shall establish a Deputy Director for Primary Education and thereafter establish at an appropriate time, an administratively separate Directorate of Primary Education." In October 1993, the Directorate was established as an attached department with full fiscal and administrative authority.

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| 1989 | Program Grant Agreement between U.S. and Pakistan |
| 1990 | Additional Director of Primary Education appointed within Directorate of Primary/Secondary Education |
| 1991 | Secretary of Education formed committee to study the organizational structure in the four provinces and Kashmir and to propose a reorganization of the schools' Directorate for Balochistan based on that study |
| 1992 | PED formation amended by the Secretary and Minister of Education |
| 1993 | Director of Primary Education appointed, and Directorate of Primary Education established with full fiscal and administrative authority |
| 1994 | Directorate fully staffed, budgeted, and operational |

During 1990-91 and 1991-92, the more immediate concerns of establishing the program took precedence over establishing the Directorate. In fact, the PED Annual Work Plan for fiscal 1991-92, approved in May 1992, set a benchmark the strengthening "the capacity of the Office of the Additional Director to administer and manage the primary education system..."

In July 1991, the Secretary of the Education Department formally established a committee to develop a plan to establish the Directorate surveying the administration of primary education in the provinces of Pakistan and Azad Kashmir. Survey reports* indicated that the NWFP Province had bifurcated the Directorate of Schools into a primary directorate in June 1990. The other two provinces were in varying stages of separating the administrative powers.

The committee's final report recommended that the school administration be bifurcated at the elementary level through eighth grade. The original plan in NWFP had been to bifurcate at eighth grade and the Punjab** was experimenting with restructuring on an eight-to-four grade basis, that is, eight years of elementary education and four years of secondary education, thereby combining secondary and higher secondary education.

In February 1992, representatives of various groups from the education, planning and development, and finance departments, in addition to the senior education staff association, signed an understanding in principal that set out the terms upon which a Directorate of Primary Education (grades one through five) would be established and specified a number of organizational and financial concerns that must be addressed. This understanding was crucial because it replaced hostile debates with a written statement that registered all concerns.

During this period of negotiations concerning the establishment of the Directorate, encouragement from USAID and subsequently from the World Bank was steady. The presence of the covenant in the USAID grant agreement was a significant motivator for the government to establish the Directorate of Primary Education. The World Bank made establishing the directorate a condition for negotiation of the IDA credits that would be used to sustain developments following termination of the USAID support to the Primary Education Development Program. By the Fall of 1992, there was a line item in the provincial budget, a negotiated agreement for posts to staff the directorate, an announcement by both the Secretary and the Minister that the directorate had been formed, but still there was no directorate; in fact, the Director Designate was still the Additional Director, and no new posts had been sanctioned.

* A series of four reports were prepared by Dr. William Darnell, Team Leader PED and Ms. Uzma Anzar, Program Associate. The Secretary requested the TA team to conduct the survey because of inconsistent reporting by various government factions concerning the status in the other provinces.

** As of fiscal 1993-94, the Punjab Province reorganized and had established an eight-to-four academic administration, with an Office of Elementary Education.

During the mid-year program review in December 1993 this became a major issue. The government needed to negotiate the future World Bank IDA loan for continuation of primary education development. An additional \$7 million in USAID grant funds were contingent upon satisfactory resolution of this and other issues. The deadline for approving the new Schedule for New Expenditures (SNE), which would staff the directorate, was fast approaching; yet, as some suggested, intentional, bureaucratic errors or lost files were delaying the process. Again, at the last minute, the SNE was approved because the team was in Washington, D.C., and was ready for negotiation. The opposition did not rest. Further delays were apparent as pressures to place a person more acceptable to the opposition in the position of the director were played out and further delays ensued.

In May and June of 1993, a series of actions were taken to ensure that the directorate would finally become a reality. With the full support of senior bureaucrats and political leaders, the summary for creation of the directorate was again prepared and forwarded through the proper channels. The Finance Department presented a full staffing budget to the Provincial Assembly, and the SNE's were properly prepared and in place. Almost three-and-one-half years after the establishment of the post of additional director and almost a year after the Directorate apparently been established, the governors issued the formal notification establishing the Directorate of Primary Education as an attached department.

As difficult as the birth of the directorate was, the delays had allowed for some important preparations to be completed. These were as follows:

- ◆ An effective Educational Management Information System was in place.
- ◆ Detailed, functional job descriptions for Directorate staff and field offices, which included a program quality and monitoring component, were developed and approved.
- ◆ The Service Rules of Government were modified to remove legal restrictions that prevented gender equity in posting.

The foregoing description has been provided in some detail to illustrate to the reader that it is necessary to take a long-term view of development. Persistence and strong commitment on the part of the change agents within the government or society must be there. Close support of the situation by the donor and technical advisers is essential in promoting the process by which governments implement change. The number of times when donor requirements were used to stimulate a discussion or force a decision or the Technical Adviser was called in by government officials to assist in or facilitate an action or deliberation cannot be enumerated. The fact the TA was in place in the province and readily available was essential.

The fact that over time the government learned to more effectively manage its use of the Technical Adviser and defined the role of TA in Balochistan's development process, is even more

significant. Recognizing TA as external resources that assist in accomplishing tasks or goals and are to be used as such led to the situation where today, the Directorate of Primary Education contracts for the professional services of individuals and organizations, such as the University of Balochistan and the Society for Community Support (NGO) to assist with development tasks. The government has also entered into a contract with the Academy for Educational Development to retain and expand technical assistance support through 1998.

2. Develop education management information systems (EMIS) and encourage use of data in improved planning processes.

Before 1990, there were 129 different questionnaires for reporting enrollment data in Balochistan. There were almost as many counts as there were forms and sources. Data were used to justify a situation rather than contribute to informed decision-making.

Implementing the BEMIS. The USAID BRIDGES Project of Harvard University placed a consultant in Balochistan to survey the situation and begin developing an EMIS for Balochistan. This effort was part of a national initiative. Recognizing the value of information in the change process, the PED Technical Adviser placed a priority on getting an EMIS established. Since USAID grant funds had not yet arrived in the province, the Additional Chief Secretary, Development, authorized the release of the necessary funds from the Balochistan Annual Development Plan Budget.

The school census. In October 1990, the school census was successfully completed. Balochistan and NWFP were the first provinces in Pakistan to do so. In April 1994, the seventh semiannual census of schools was completed. The census now includes all schools through secondary as well as private schools. That first census showed that 28,000 girls were attending boys' schools. This fact was a wake-up call to the bureaucracy that had been saying that it was impossible to have boys and girls attend school together. It also immediately increased the number of girls enrolled in primary schools because many of the girls attending boys' schools were reported as boys. Most of the girls attending boys' schools were in remote areas of the province, thereby exploding another myth that said people in rural areas were not interested in sending their girls to school. It also immediately raised the number of girls enrolled in primary schools because many of the girls attending boys' schools were reported as boys.

The human resource survey. During 1990-91, the human resource survey (HRS) was conducted in Balochistan. This survey was funded by UNICEF and directed by Ms. Qazalbash — a government officer. It was supported by PED and BRIDGES TA. The HRS covered 9,004 villages in all of the areas of Balochistan — 2,000 more villages than had been recorded in the official government records. The results were surprising to even the most optimistic observers. A majority of village leaders said they wanted primary education for girls. Prior to the conduct of the survey two misperceptions existed: (1) that there was no interest in primary education for girls and (2) that there would be religious objection to girls' primary schools. Both perceptions were incorrect.

National Education Management Information System (NEMIS). USAID and UNDP co-sponsored the development of a National Education Management Information System (NEMIS). The purpose of NEMIS is to integrate all provincial data in accordance with a standard set of information guidelines. Implementation of NEMIS is uneven across the provinces. Balochistan contributes its school census data on a regularly scheduled basis.

Computers in day-to-day operations. In addition to establishing computer cells in the district offices, BEMIS cells have been established in the directorates of primary and secondary education. Stimulated by BEMIS, the government of Balochistan has purchased a large number of additional computers for installation in other offices in the Education Department under the supervision of BEMIS personnel.

3. Enhance the capacity of the directorates through improved procedures and training.

The organizational structure illustrated in Figure 5. 2 and the associated roles and responsibilities of the various offices evolved during the long process of establishing the Directorate of Primary Education. Several significant policy decisions influenced the eventual outcome. The debate concerning organizational questions was particularly intense because decisions made for primary education would have an impact on the Directorate of Secondary Education.

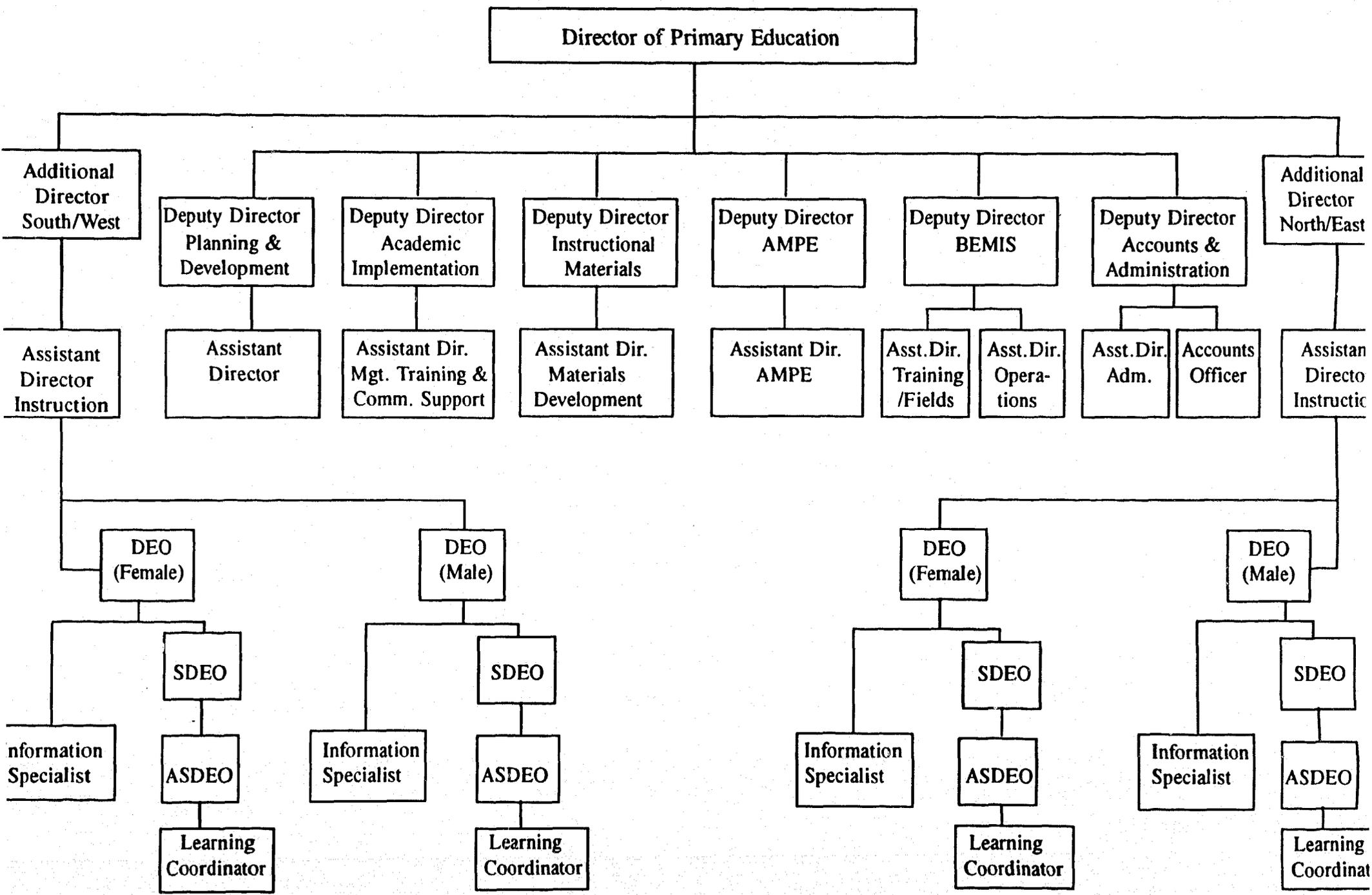
Additional Director. Two additional directors with line authority support the director in managing the field offices. Male and female administrators have equal authority and responsibility. Currently, each Additional Director has 12 districts and 18 district education officers (12 male and 6 female) reporting to them. Note that each office of Additional Director also has an assistant director responsible for liaison and for monitoring academic quality.

Divisional Directors. No Divisional Director offices were established in primary side because of duplication of effort. Eliminating this post saved substantial funds and shortened the psychological distance between the school and the directorate, thereby improving access and communications. In the NWFP, the offices acted only as communication links from the field to the head office.

Female District Education Officers. Establishing these posts required changing the Service Rules.

Deputy Director Academic Implementation and Deputy Director, Assessment, Monitoring and Performance Evaluation (AMPE). These offices represent a break from the past attitude toward the education system. The central office was concerned only about inspection and financial issues. DEOs also paid little attention to whether teachers taught and children learned. By establishing these offices, the Directorate of Primary Education and the government made a commitment to ensuring improvements in the quality of educational services. The community-government partnership and the community support process is also supported from the Office of Academic Implementation.

Figure 5.2. Current plan of organization, Directorate of Primary Education, Balochistan



Assistant Subdivisional Officers and Learning Coordinators. These posts, and the post of supervisor existed under the prior scheme, but were ineffectual and had no meaningful role. The post of Supervisor (Inspector) was abolished and merged with Learning Coordinator. The learning coordinators were assigned responsibilities for monitoring instructional quality within the schools, coordinating and providing in-service training and assisting teachers with their day-to-day planning. The ASDEOs were assigned oversight responsibility for this function. By this action, the directorate further signaled a shift toward ensuring the quality of primary education in the province.

The organization has been structured to promote and ensure that attention will be paid to program quality through multiple integrated activities. The other characteristic of the organization is open communications both within the offices of the Directorate of Primary Education and within communities and schools.

Functions and job descriptions and associated training. As mentioned previously, in preparation for the new directorate becoming operational, functional job descriptions and a desk manual for officers that summarized authorities were developed, and all field and directorate officers were given job orientation training.

Other training activities. A series of workshops have been conducted on how to use empirical data in planning and decision-making. Ranging from the systems approach to planning to how to use BEMIS data in deciding which schools should get an additional teacher or classrooms. Female officers with the aptitude and sufficient seniority soon to be eligible for either Assistant Director or headmistress positions were trained in basic management skills in preparation for entry into those management posts.

4. Facilitate the promotion of female employees and gender equity.

Perceptible shifts in attitude are taking place in Balochistan. Although gross gender differences continue to exist, a wide-ranging set of initiatives from training to changing the service rules are beginning to show results. By increasing and strengthening women's participation in the public and private sectors, as well as within the program itself, PED sought to decrease existing gender inequities in the work environment and to increase the educational capacity of the country.

Service Rules and quotas. In 1990, there was only one grade 18 female in the Schools Directorate with responsibilities restricted to female education concerns. Two females were posted as divisional education officers, and there were none in the Education Department Secretariat. Females in other management and high-level policy roles simply did not exist.

A process began of trying to determine whether there were regulations that were discriminatory or if it were in fact only one of attitudes that needed to be readjusted. The answer was always that there were no biasing restrictions against posting females. Discovery of the Rules of Government Service was significant. These rules had a female and a male section. For every position, there

were rules concerning the authority that went with the position, the selection promotion process by which a person attained the post, and other such important items. Then came the revelation. Neither the position of Director nor that of district education officers were in the female section. Although there were no rules excluding females, there also were no rules by which females could be included. This discovery led to a two-year effort to modify the rules.

The annual plan for PED for 1993-94 set quotas for posting females in the new Directorate of Primary Education. In September 1993, S&GAD* announced that the rules were modified. In December 1993, the Secretary of Education announced the posting of the 13 female DEOs and the deputy and additional directors.

In the Directorate of Primary Education, the situation in March 1994 was as follows:

- ◆ One of two additional directors was female.
- ◆ One of five deputy directors was female, and a female was being sought for a currently vacant post.
- ◆ A total of 13 District Education Officer posts (Grade 18) were sanctioned, and all were filled.
- ◆ A minimum three of seven Assistant Director posts must be filled by females; one was in place and the others were expected shortly because the Public Service Commission notified the posts.
- ◆ A total of 14 posts of SDEOs (female) were sanctioned, but the posts remain unfilled.

In some areas of the province, there are few eligible women with the necessary experience. Often capable women are hesitant either because they have to relocate or because they lack confidence after years of having been placed in a second position.

Leading by example. The technical assistance team has demonstrated that women can serve as an effective force in management and policy roles.

The TA team now includes females (two of five). Half of all education promoters in the field are women. More than half of the locally hired AED professionals are women. The Administrator and contract specialists also are women. All program associates who work in direct support of

* The Services and General Administration Department (S&GAD) is responsible for implementing the Services Rules and notifying any changes in the rules. This generally requires approval from the Chief Minister and the Chief Secretary of the Province.

the technical advisers are female, including those in administration and policy. Professional training and study tours have been distributed equally and a preference has been given to women for long-term degree training in the United States (9 females out of 11 participants).

Other actions. The age limit and minimum qualifications required were adjusted in the case of female teachers so that more female teachers could be hired. The age limit was also relaxed in the case of older qualified males so that more teachers could be recruited for girls' primary schools. Newly developed instructional materials are more balanced in terms of gender inclusive language and visuals.

5. Use participants that receive long-term training.

PED-sponsored participants. As noted, 9 of 11 PED-sponsored participants from Balochistan are female. All of the participants have signed a commitment to work with primary education when they return to Pakistan. Two have returned. Both are from the private sector and worked with the TA Team before going to the United States:

- ◆ Mr. Syed Atta Abbas, MBA (August 1993), is working as a senior-level consultant with the Directorate of Primary Education to improve financial management through computerization of many routine procedures and establishing a database of financial transactions. He is also working with the AMPE monitoring cell to develop program indicators that will be put in place to oversee decentralized functions.
- ◆ Ms. Uzma Anzar, MBA (December 1993), is now Managing Director of the Society for Community Support For Primary Education in Balochistan. She developed the organizational documents for the society as a student project. This NGO now has more than 40 employees and has contracts with, or grants from, the Government of Balochistan, UNICEF, Trust for Volunteer Organizations, USAID, and working relationships with NGOs supported by the Canadian and the German governments as well as the Balochistan Private Education Foundation.

In 1988, prior to the beginning of the USAID PED Program, six young women were sent to the United States for education at the bachelor degree level. This was the first group of women from the province sent under USAID sponsorship. Upon their return, all five have worked as members of the AED technical assistance team.

The gender bias in hiring is toward females given the lack of other opportunities for females in Balochistan and the need to close the gender gap in the Education Department. Four men, however, who have returned from USAID scholarship programs have also worked with PED. One remains with PED but under a service contract to the director. One is now the Team Leader and Manager of the Canadian-sponsored community development organization that coordinates with the Society for Community Support and focuses on the Makran Division. The others are now

in private computer and electronic equipment businesses that work with the Directorate of Primary Education.

There are many other returning graduates from USAID scholarship programs who arrive home without jobs or opportunity and who are in unrelated fields. No government or USAID outreach program exists that helps the returnees get settled. Whenever possible, the PED Technical Adviser and staff assist by referring them to possible opportunities with other donor-supported programs, local businesses, or government departments.

6. Improve financial planning and reporting.

Efforts to introduce the computerization of routine tasks and to establish a database have been accepted by the Director as necessary but are resisted at the operational level. The problem is distrust of the computerized database. Too often data entry errors go undetected until they are noticed by the accounts officer. This tendency to do what you are doing without verifying results is endemic to the system. The top-down approach that has characterized the system carries with it a negative factor. Staff in lower-level positions are unaccustomed to assuming responsibility for either their actions or their products. Failure to recognize how ingrained this tendency is led to some initial setbacks that have slowed the process. The current effort to get the system established will take at least a year. But, it is being approached in a necessarily slow and careful way, which requires changing some bad habits along the way.

Current system. A successful effort was undertaken to introduce financial accountability into the manual system, as noted below:

- ◆ All cash transactions are supported by receipts, and the accounts ledgers are closed on a weekly (sometimes daily) basis.
- ◆ All funds coming into the Directorate of Primary Education are assigned to program budget categories and accounted for by category (both recurrent and development). For example, the manual system reports how much is budgeted for teacher supply and training activities and reports the expenditures and obligations incurred to date.
- ◆ As noted, obligations are recorded. Prior to the PED, only a cashbook — single-entry system — was maintained in the Education Department for all activities. This practice created budgeting and planning nightmares. The Technical Adviser working with the Assistant Director, Administration, was able to effect a change that added recording obligations to the systems and setting up a rudimentary double entry system to support planning.

- ◆ Nonlapsable accounts are uncommon and almost unheard of in the nondefense sector. The government closes all accounts on the last day of the fiscal year and reopens accounts a few weeks or months later. This situation is comparable to a person closing his or her checking account each December 31st and reopening a new one after all checks have cleared and the account is balanced. This approach severely disrupts operations. The improvements made in primary education's system of accounting under the PED Program led the Accountant General and the Secretary, Finance, to approve a request to make the account nonlapsable. It is still the only nonlapsable account in Balochistan.

These improvements in the financial system have had a significant impact on the progress of developments in primary education. Smooth cash flow means uninterrupted development. An audit-proof, transparent system has led to the Additional Chief Secretary (Development) and the Steering Committee to have confidence that the Director, supported by the TA, will not misuse resources and that good fiscal policy will be applied.

7. Involve the private sector.

Private-sector involvement was a program element that was slow to develop in part because the concerns about establishing a Directorate of Primary Education overrode other issues.

The Technical Assistance contract. The government contracted with the Academy for Educational Development to continue the TA contract for four-and-a-half years. This extension is significant because the government generally considers technical assistance an external burden imposed by the donors. This contract was actively sought, thereby confirming the perceived benefit to the Balochistan Government.

Architect and engineering firm. In December 1991, the government entered into a contract with a private firm to assist with the supervision of school construction and other management functions. It took 18 months to complete the process. Steady pressure to effect a contract was maintained by USAID and then additional support came from the World Bank, thereby illustrating an important role of the concerned donor in managing change. After more than two years of tumultuous exchange, the government has decided to continue this function when the current three-year contract expires in December 1994. The contractual procedures and funding are in place to do so.

Balochistan Education Foundation. The Balochistan Education Foundation was established in 1993 after a delay of two years in acting on the enabling ordinance. The Foundation Fund that will be used has as its initial resource grants from the provincial and federal governments and income from investments of those grants made by the foundation. Other sources are donations, government revolving funds, and grants from local bodies.

The functions of the Balochistan Education Foundation are to:

- ◆ Assist the private sector in establishing educational institutions.
- ◆ Give grants to nonprofit, private educational institutions for improving in facilities.
- ◆ Provide or assist in obtaining loans, or selling or leasing plots to private-sector institutions in order to improve the quality of education.

The foundation is also playing an important role in implementing the girl's fellowship program, which is described below.

Habib Bank trust and communities. Home schools are located in the Kachi Abadis (slums) of Quetta and Pishin. They are an alternative to formal schooling for girls who are unable to attend regular government schools, either because there are no schools in the area or because the girl is somehow restricted. A major restriction is that girls are needed to work in the home or to assist with other labor during the morning hours. Home schools have flexible scheduling, often in the afternoon and are located in the home of a family in the *mohalla* (neighborhood where the child lives).

Habib Bank is a major institution in Pakistan. It has a benevolent trust that is directed to do socially appropriate projects. The trust was disappointed with earlier experiments and was responsive to a suggestion from a TA team member working with communities that Habib Bank Trust consider supporting home schools in Balochistan. The PED Program has provided assistance to teacher training and monitoring of performance in the schools. Responsibility for this support has now been taken over by an NGO with funding from UNICEF. This program illustrates the creative involvement of the private sector. It also provides yet another example of how PED TA initiated an activity and then shifting it to a governmental department or NGO to carry on.

Girls' Fellowship Program. This program is to be funded with World Bank IDA credits, but is being developed as a program by the USAID TA for administration and management and for community development. It will be implemented by the Balochistan Education Foundation, monitored by the Society for Community Support, and assisted by the TA under the new technical assistance agreement.

The Girls' Scholarship Program was established with the objective of developing low-tuition private schools in both urban and rural areas. The goal is to provide high-quality education to a small number of disadvantaged children at a lower unit cost than within comparable government schools. The advantage of this is that the number of children being educated is expanded with a limited investment on the part of the government. To achieve this objective, additional funding that will be required has already been obtained from a donor organization.

The low-income urban component will provide approximately 1,000 scholarships to girls aged five through ten residing in ten randomly selected low-income areas within the municipal boundaries of Quetta. Initially, the program will supplement existing Habib Bank Charitable Trust-funded schools by encouraging them to upgrade by complying with government certification standards, and then it will support the creation of new home schools, which will be required to upgrade after a probationary period of two years. The program will be expanded to other municipal areas after the evaluation period.

The rural component will consist of ten villages in each of the six divisions of the province, which do not already have a girls' school but have demonstrated the desire for a school by establishing a Village Education Committee. A single NGO acting as an umbrella organization will be responsible for implementing the program by subcontracting the technical implementation to three or more other NGOs in Balochistan.

8. Encourage community participation.

PED created a plan to link communities and the Government of Balochistan in a partnership that resulted in approximately 120 new community-based schools for girls. These schools were staffed by female teachers who had been trained by the Mobile Female Teacher Training unit. The plan demonstrates that parents can play a significant role in reducing the dropout rate, improving educational quality and efficiency, and maintaining school facilities if they are involved as partners in their children's education from the very beginning; are kept informed, and are effectively assisted by the educational system, particularly at the district and village levels.

SUMMARY

The presence of long-term TA, appropriately supplemented with short-term international and Pakistani consultants were critical to the success of the program. Without having resident TA in place, accepted as partners by the government, and allowed to participate in major policy and administrative sessions, the changes that have been effected would not have occurred.

A corollary is the crucial role played by the donors. USAID was the major partner in the program and often placed requirements on the system, many times with the concurrence of the government. One could call this process "complimentary conditionality," where the strong demand of the donor is coupled with the help and advice of trusted advisers. This seemed successful in moving things forward in a complex, sometimes hostile, environment. The trust which developed over the years was an irreplaceable ingredient in managing change.

The next major factor in the change process, and more important for sustainability, is the growth in the capacity of Education Department, particularly the Directorate of Primary Education, and the emergence of supporting organizations, such as the Society For Community Support to Primary Education in Balochistan, the Canadian SPO-supported community development activities in the Makran Division, the shift toward cooperative participation by the German Funded BRSP,

the backing of the Trust for Volunteer Organizations (TVO), and the University of Balochistan Education Department. It is also significant to note the emergence of an Education Foundation

that will stimulate development of the private sector. Balochistan, the province some said was a hopeless situation given its remoteness and tribal culture, is making significant advances.

ACCOMPLISHMENTS

1. **Separate Directorates.** The mandated goal of having separate directorates solely responsible for primary education has been achieved, thereby establishing the institutional framework for sustainable development of primary education in both provinces.
2. **Personnel.** Capable officers have been appointed in the positions relating to the four component areas. This is a continuous activity because resistance from the bureaucracy has to be overcome.
3. **Improved Planning.** Planning has evolved from being TA team-centered to TA team-assisted. Initially, the annual plans were written by the technical advisers, but now government officials require only their assistance and do the actual writing themselves.
4. **Successful Follow-on Project.** Both Balochistan and NWFP have been successful in obtaining funding from other donors than USAID — the World Bank in the case of Balochistan and a six-member donor group for NWFP.
5. **Financial Support.** Increased provincial commitment to primary education in the form of mandatory increases in recurrent financial expenditures has been provided by the Balochistan and NWFP governments, and support targets have been exceeded.
6. **Gender Equity.** By increasing and strengthening women's participation in the public and private sectors, as well as within PED itself, the effort has been successful in decreasing gender inequities in the education work environment. This accomplishment is evidenced by the number of women working for the program both on the government and technical sides.
7. **Changes in Service Rules.** Teacher entry-level qualifications were relaxed so that more teachers for girls' primary schools could be recruited. To ensure sustainable quality output from the BEMIS, Service Rules were changed to allow 50 percent of all new appointments to be made by direct recruitment and to stop all transfers out on a regular basis because this approach hampers long-term institutional development. Promotion of women to Grade

- 19 was not possible because of the way in which service rules were structured. It took a full year to change, and now a woman has been promoted to Grade 19.
8. **Job Descriptions (Balochistan).** Job descriptions for DEOs, SDEOs, ASDEOs, and LCs have been developed in collaboration with the government. These descriptions have been useful in assigning duties and in identifying redundancy. An officer's guide has also been compiled as a resource document for officers of PED.
 9. **EMIS.** The educational management information systems are fully operational in both provinces, and school censuses have been conducted regularly. Data generated have been accepted as reliable by the government and, in many cases, has been used as the standard to compare data from other sources. Data-collection activities have been expanded to meet increasing requirements.
 10. **Decentralization.** Decentralization of planning, budgeting, and accountability to the district and subdistrict levels exists in both provinces and is a direct result of the consolidation of planning and administration by the Directorate of Primary Education.
 11. **Education Foundation.** The need to mobilize the private sector has been felt because the governments in both NWFP and Balochistan are unable to meet the resource requirements for expanding school places and increasing girls' enrollment. Education foundations have been established in both provinces. The function of these foundations is to fund private-sector initiatives for primary education.
 12. **Balochistan Girls' Scholarship Program:** The Girls' Scholarship Program has been started in Balochistan, with the objective of developing low-tuition private schools in both the urban and rural areas.
 13. **Community Participation (Balochistan).** The advantage of using a grass-roots approach, or the community support process, for increasing girls' access to schooling has proved to be extremely effective in rural areas. An independent NGO has been set up (SCSPEB), with the objective of promoting primary education for girls in Balochistan. The community support process is a mechanism by which society creates a capacity in the community, NGOs, and government to establish an effective system of primary education at all levels as responsible partners. NWFP is following suit.
 14. **Training.** Relevant training programs have been conducted to develop the management skills of government officials who have a direct bearing on the program. These training programs have been conducted in country as well as abroad.
 15. **Donor Coordination.** Before the PED Program was established, donor activities in primary education were often overlapping. Since the establishment of the DPEs, however,

all donor activities are coordinated through the DPE in Balochistan. In NWFP, the donor coordination has already been initiated, the benefit of which is that resources are being used more effectively.

CONSTRAINTS

1. **Provincial Bureaucracies.** The seniority-based system of promotion and lengthy and complicated procedures required to make change and resistance to change, are characteristics of the provincial bureaucracies that hindered development. Delays in appointments and poor-quality appointments have adversely affected the planning capacities of both directorates of primary education. This is especially true of the NWFP, where the bureaucracy is more rule-bound. There are four departments at the provincial level alone that are involved in planning and administering primary education.
2. Alteration in the time frame established for the program — shortening it from a ten-year program to a four-year effort — has meant that many of the planned changes could not be achieved.

LESSONS LEARNED

1. The government has recognized the necessity for institutionalizing development gains so that the changes are sustainable when outside funding disappears.
2. There seems to be no hard-and-fast rule as to when and where to use the program or the project approach. Clearly when policy changes are the primary emphasis, the program approach is preferable. Using the correct approach is, however, critical to the success of any development activity. Whether we use a project or program approach must depend *en fin* on the nature of the proposed development and the environment in which it is to be carried out.

Chapter 6

Curriculum and Instructional Materials Reform



6. Curriculum and Instructional Materials Reform

According to the Program Summary for the Primary Education Development Program for Pakistan (1989), the provincial plan to improve primary education had two main objectives. One of these was to improve the quality and efficiency of education by:

- ◆ Ensuring that the major elements of the instructional program (for example, curriculum, instructional materials, teacher training, supervision, and administration) were analyzed and redesigned so that each contributes directly to achieving the outcomes intended by educators.
- ◆ Demonstrating that when test results indicate that outcomes are unsatisfactory, the elements are reanalyzed to determine where the problems are. Problematical elements were then to be modified and tested until there was evidence that they worked as intended.

To achieve the foregoing objectives, the following activities were proposed:

1. Train new teachers and the backlog of untrained teachers through an improved PTC program.
2. Offer training courses to teachers, supervisors, learning coordinators, and head teachers in teaching methods proved to be effective in pupil learning in Pakistani primary schools.
3. Improve teachers' content knowledge and their skills in the languages of instruction.
4. Train trainers (Bureau of Curriculum) in effective teaching methods.
5. Improve textbook quality and durability.
6. Furnish teachers with annotated editions of pupils' textbooks that provide easy-to-follow, explicit directions for each lesson.
7. Provide each classroom with an adequate supply of teacher support materials, such as alphabet cards, number cards and number lines, illustrations of science processes, and similar items.
8. Supply supplementary reading, math, and science learning materials to pupils.
9. Develop an achievement testing plan.

10. Offer extensive training opportunities for educators to improve primary education through study tours, short- and long-term training abroad, and short-term training courses in country, seminars, and workshops.
11. Provide both long- and short-term technical assistance to improve teacher training programs and curriculum and instructional materials (including textbooks, annotated editions for teachers, teacher support materials, and supplementary learning materials for children).

To address these objectives, a long-term Technical Adviser was hired for each province. Because the nature of the provinces and the duration of the TAs were unique to each province, this report will describe a case study of change within each province and will focus on activities pertinent to each. A listing of federal and provincial achievements will illustrate how similar results were attained using two different methods of startup and follow through.

NWFP INSTRUCTIONAL MATERIALS DEVELOPMENT IMPLEMENTATION AND SUPPORT

CASE STUDY

The PED Program placed implementation of an effective instructional system at the core of quality reform. Central to this system was the development of improved instructional materials for classroom use. Such development was expected to be a step-by-step process that included:

- ◆ Identifying the conditions of teaching and learning in NWFP classrooms where materials would be placed
- ◆ Developing teaching and learning materials that met the conditions of NWFP, fit Pakistan's curriculum objectives, and were educationally sound
- ◆ Field-testing and modifying materials in experimental schools to ensure that they met the intended objectives
- ◆ Creating integrated training, supervision, and assessment systems to support the use of materials in the schools.

GATHERING BASIC INFORMATION

In 1991 in NWFP, the first "solution-oriented" studies were conducted to prepare for developing an improved primary program. Initial visits to schools made it clear that two major conditions contributed to the poor quality of instruction. The first was the existence of a large class of

kindergarten children, who were neither officially recognized with resources nor provided materials specifically directed at their age level. The second condition was the predominance of multigrade schools in NWFP that made it difficult for teachers to use materials and methods designed primarily for single-class situations. It had also been clearly documented in the BRIDGES studies of 1989 that supervisors were neither providing the necessary support for teachers nor adequately monitoring teaching and learning activities in the classrooms.

If an improved instructional system were to be implemented in NWFP, it would require a district supervisory staff trained to support teachers and feedback information to improve new programs and materials. This supervisory staff would also be key in providing grass-roots information that ultimately could be used in the districts for planning better use of supervisory time, teacher in-service training, and the allocation of teachers and classroom resources. Thus, in addition to gathering information about conditions in schools for program developers, it seemed appropriate to use the classroom studies to train district staff in the skills they would need to implement an effective instructional system.

The Kachi and multiclass studies were conducted in September 1991 using male and female assistant subdivisional education officers (ASDEOs) from every district of NWFP. The ASDEOs were trained to fill out a classroom questionnaire based on those previously used for the BRIDGES studies. It was the first time that most of the ASDEOs had spent time in classrooms observing, rather than "inspecting," the education program. Data were collected for a week in approximately 64 schools (in each study) selected randomly within ten kilometers from the subdivisional education officer's (SDEO) office.

A number of study findings were evident relating to instructional materials development. (These findings are described in more detail in the reports of the studies.) Among the findings were that no instructional materials were specifically designed for the Kachi children, and it was customary for instruction to consist of the memorization and recitation of alphabets and numbers. Other resources were also not officially provided to these classes, though the students constituted approximately a quarter of the primary enrollment and consumed approximately a quarter of the teachers' efforts. The Kachi class was usually the largest class in a school, with enrollments of commonly 50 to 100 students. The classes rarely had any instructional aids other than a blackboard. Efforts to improve instruction in this class and the other early primary classes would affect learning for the majority of the children enrolled in primary schools.

The multigrade study suggested further constraints to the teaching environment. Teacher-dependent materials made it difficult to assign independent work to students, thereby causing teachers to rely on memorization as an easy way to address the problem. The teachers were also not knowledgeable in the subject content matter, as evidenced in their low graduation (division) scores and the numerous mistakes observed in classes. Multiclassrooms showed large variations in the numbers and ages of students and, as with the Kachi classes, were deficient in instructional aids, materials, and classroom facilities. Supervision was infrequent and usually unrelated to instructional support. It was concluded that the education program could be improved in both

types of classes with instructional materials that addressed the most important needs of these classrooms, specifically, improving student skills and making the materials both user-friendly and less teacher-dependent.

ESTABLISHING AN INSTRUCTIONAL MATERIALS CELL

In October 1991, an Instructional Materials Development Cell (IMDC) was established in the Directorate of Primary Education in Peshawar. Staff were recruited from promising young primary school teachers with high academic qualifications (B.A., B.S., or higher degrees) and at least five years of teaching experience at the primary level. Of the 50 candidates who appeared at a preliminary workshop to test their suitability, 13 became subject specialists and researchers for the Cell. Primary school teachers were chosen because they were familiar with conditions in the classrooms as well as with students and teachers in the field. The aim of the Cell was to develop instructional materials and the associated teachers' guides for the main academic subjects — math, science, Urdu, and Pashto in Kachi through Class V.

PREPARING INSTRUCTIONAL MATERIALS

In 1991, the staff began writing the Kachi materials. Under the supervision of a curriculum specialist provided by PED, they were trained to write the materials following Pakistani curriculum objectives which, in the case of the Kachi materials, were beginning first grade objectives, and to write them according to general education criteria related to scope, sequence, conceptual complexity, and the developmental level of children. Evaluation sections were distributed throughout the books to enable the teachers to determine how well the children were absorbing the intended skills. Staff prepared attractive illustrations for the materials showing local details and containing a balance between pictures of male and female figures. To keep the cost of books low, textbooks were produced in black and white, with the exception of lesson units on color, while still adding considerably more pages than contained in previous books. When the Kachi textbooks in Urdu, Pashto, math, and science were completed, experts verified the accuracy of the subject matter. The Kachi books were then produced in experimental editions, with languages books divided into two volumes for the full school year and the math and science book in one volume.

Accompanying the textbook, and also written by the IMDC staff, was a teacher's guide with simple, but complete, instructions on exactly how to teach each lesson. The lesson format used in the guides was based on a six-step process, found in a 1989-90 BRIDGES study in Pakistan to be associated with higher student achievement: review, focusing on a topic, clear presentation with examples, guided practice, independent practice, and homework (except at the kindergarten level). Teachers were trained in this format and knew that they could expect it with every lesson. Providing these detailed teaching instructions was intended to help teachers move away from an instruction based primarily on memorization.

INTRODUCING THE MATERIALS

When the Kachi textbooks and guides were ready for experimental trial, field-testing began. During the first trial of 248 schools in three districts, the IMDC staff spent approximately one week in each district training the teachers and supervisors (male and female ASDEOs and LCs) in how to use the student textbooks and teachers' guides. The training consisted of helping them to understand the effective teaching practices' method used in each lesson of the teacher's guide, explaining the main concepts that were included in the students' books, and giving them practice in enough lessons to feel comfortable with the method format. During their initial use of the new materials, each teacher was assigned a single Kachi subject, math and science, Urdu, or Pashto.

Efficient teacher training. With more than 20,000 teachers in NWFP, one concern of the developers was to find ways to introduce new materials as cost-effectively as possible. The task was especially difficult because the methods for teaching subject content differed considerably from previous methods of instruction. The single format lesson with detailed instructions for teachers was one means by which training was simplified. With this format, a minimal teacher training could be reduced to learning the single format. Another problem was the small size of the IMDC staff who were unable to train all of the teachers in all of the districts. An experiment was, therefore, conducted during the first cycle of the evaluation to determine whether district staff might be trained to introduce new materials as effectively as the IMDC developers. In a paired school design, some teachers and their supervisors were trained for three days by IMDC staff in the use of the new materials. The supervisors, in turn, trained a new teacher in a school near that of the already trained teacher. Later, the achievement scores of the students of both types of teacher were compared to determine whether the variation in the training program made a difference in student learning. It did not, and thereafter the IMDC felt justified in relying more heavily on the supervisors when new materials were introduced in later cycles and in more districts.

Supervisor role. During the training, supervisors and teachers were organized in a chain of accountability for student learning. The teacher taught the students, the LC supervised and supported the teacher, the ASDEO was responsible for training the teacher and supervising the work of the LCs, and the Subdivisional Education Officer (SDEO) assumed overall responsibility for the subdistrict or *tehsil*. Supervisors were assigned a schedule for visiting the experimental schools on a weekly basis to note in observations regarding the use of the new materials. The visits provided a structured opportunity for supportive interaction between supervisors and teachers — an important training objective, while the questionnaire provided field information about the materials as well as evidence that supervisors' visits took place. Supervisors who proved to be effective, as evidenced in student results and the support they gave to teachers, were designated master trainers to introduce materials in new *tehsils* or districts and to train their own teachers in new materials. After one or two field-testing cycles in their districts under the supervision of IMDC staff, these master trainers were called to Peshawar for training in the next cycles of new materials and asked to train other supervisors and teachers in their districts. Pakki (first grade)

and English materials were introduced through the master trainers in this way. IMDC continued to test a sample of classes in each district to determine whether the materials were being introduced and supported properly.

Standards for the materials. The IMDC staff set general objectives and standards for the materials. The three main objectives were to: (1) adequately teach the skills required by the curriculum; (2) interest the children; and (3) be used easily by teachers. The standards set for the materials included, for skills — that more than half of the classes in each district would get 75 percent or more average scores and each schooling context, urban, rural, girls, boys, large classes, small classes, multiclassses, and single classes would produce essentially the same results so that no environment would be disadvantaged by using the new materials. The objectives of student interest and the ease of teacher use also met standards determined by observing student engagement during the use of the materials and by interviewing teachers. The materials consistently met high standards for student interest and teacher suitability, which suggests either that the materials were well-received or that the indicators were not sufficiently discriminating. With a few exceptions that were mostly corrected with teacher retraining, the materials also met the high achievement standards for student skill levels.

Testing and feedback. Six weeks after the training, and at periodic intervals thereafter, the IMDC staff returned to test the students in experimental schools. The tests constructed by IMDC staff consisted of items similar to those in evaluation sections of the new materials. If the teacher followed the teacher's guide and taught the lessons as indicated, the children could accomplish the test easily. During the testing, it became immediately clear whether or not the children had been taught the new materials. If all of the students of a class appeared to have difficulty on the test (and other classes had high scores), then the teacher would be retrained by the master trainers. If many children had difficulty with certain test items, these parts of the books and teachers' guides were reviewed and improved by IMDC staff.

During the initial stages of the evaluation, information from achievement tests, student engagement questionnaire, interview forms, and supervisor observation forms were entered into computers, analyzed, and fed back to the IMDC developers, who modified not only the materials but also their training programs. The results were also produced as tables containing the names of supervisors, schools, teachers, and students results in the form of a class average. The class average constituted a performance score for supervisors and teachers that was fed back to them and discussed. When the materials reached final draft form after field-testing, they were reviewed by a committee from the Curriculum Wing in Islamabad, who approved them with minor changes for full dissemination to all of NWFP. The IMDC staff revised the materials in line with the committee's recommendations and are now waiting publication by the Textbook Board.

FIELD-TESTING PHASES

The field-testing process described above was repeated with twice yearly introductions of materials in new and old districts. Initially, three phases were developed for each set of materials:

experimental, pilot, and extension. (At present, there are only two, the "intensive" phase, where new introductions of materials are made, and the "extensive" phase, where materials are extended to the remaining districts.)

Experimental phase. During the first "experimental" phase beginning in April 1992, Kachi textbooks and teachers' guides were introduced in the three districts, Bannu, Swat, and Chitral, that had expressed strong interest in trying the materials. Chitral served as a special case because the closure of roads from September to June prevents easy contact with Peshawar during the winter months. It was decided to determine whether supervisors and district officers, after one IMDC training session in the summer, could introduce the materials on their own, without continuous monitoring by the IMDC staff. The following summer the IMDC staff again visited Chitral for testing.

Altogether the materials were tested in 248 classes, including subsets of urban and rural, male and female, multiclass and single-class schools: Math and science (127 classes), Urdu (82), and Pashto (39). With the exception of a few classes, the materials produced student achievement results above the standard during this phase. These experimental classes continued to receive materials in sequence (with Volume II of Urdu and Pashto to complete the Kachi books, followed by Pakki materials). Teachers began with one subject and then were cross-trained in another subject in subsequent introductions of materials. Classes which started with Pashto in Kachi class were also eventually given the Urdu Kachi materials during their Pakki year, at which time, transference from Pashto hastened the process of learning Urdu.

Pilot phase. During the second "pilot" phase starting in September 1992, the same Kachi materials were introduced in four new districts — Mardan, Kohat, Dir, and Mansehra. The total new classes were 239: math and science (118), Urdu (53), and Pashto (68). Again in April 1993, materials were introduced in an additional four pilot districts — Peshawar, D. I. Khan, Nowshera, Abbottabad, and Karak in 187 new classes. As during the experimental phases, once the materials were introduced, they were provided to the districts in sequence and teachers were cross-trained in new subject matters, including also Urdu if the teacher started first in Pashto. The IMDC came regularly to train teachers and supervisors, to test students and, increasingly over time, to train supervisors to take over more of the testing.

Extension phase. During the third, or "extension" phase, Kachi materials were introduced to offshoot districts by the master trainers from their parent districts with minimal involvement of the IMDC. Thus, in November 1992, materials were introduced into 20 math and 20 Urdu classrooms of Lakki district by Bannu staff and into 16 math and science and 18 Pashto classrooms of Buner by Swat supervisors. The extension phase continued during the next cycle with cross-training in new subjects and introductions of the materials for the first time in new districts: Swabi by Mardan supervisors and Tank by Bannu supervisors.

This extension phase completed the introduction of materials to all of the districts except Charsadda, which is under the Pak-German project, and Malakand, which was the UNICEF

experimental district. Eventually, Malakand asked for the math materials and were trained by the IMDC in this subject only. Each district is currently involved in a continuing process of using the new materials, feeding back information, and being held accountable for student learning. Because the IMDC worked with SDEOs in most *tehsils* within the districts,* this has meant that as *tehsils* have been upgraded to districts, as was the case when Battigram split off from Mansehra, the IMDC materials and training have already reached the new districts.

Future field-testing. Field-testing has now taken place in more than 750 schools in NWFP (576 boys' and 182 girls' schools). The large number of schools was a consequence of efforts to build the skills of a broad range of district staff to support the new materials. The large numbers, however, put enormous pressure on the IMDC, and in February 1994 a plan was devised to bring the testing better in line with the future scope and capacities of the IMDC. During the next rounds of materials introductions, the 750 schools will be divided into two groups, a small sample of eight schools in each of eight districts, to be intensively followed by IMDC staff, and the remainder given new materials and training but with monitoring turned over completely to supervisors in the local districts. Student achievement data will be brought by the supervisors to EMIS-trained district computer operators to enter and prepare tables of class scores (teacher performance scores) for the supervisors. A workshop will be held in the Center in late June 1994 for the SDEOs and the ASDEOs to help them analyze their scores and plan teacher retraining, supervisory visits, and perhaps the reassignments of teachers. At that time, they will receive training in a new testing and monitoring handbook that has been prepared by the IMDC/CBB staff.

By dividing the sample, the plan recognizes two rationales for field use of the materials — to improve the materials and their associated training and to build strong support for the materials by holding teachers and supervisors accountable for student learning. The smaller sample will provide information for the IMDC to improve materials, while the larger sample will start a process of continuous monitoring to make the primary education system as a whole perform better.

PRESENT STATUS OF CLASSROOM MATERIALS

By April 1994, the IMDC had completed and tested Kachi and Pakki materials and had completed the development of Class II materials. Before the end of the PED TA, the Class II materials will be in the field, and Class III materials will be prepared for testing. By going into the field, the developers have been able to observe first hand how their materials were being used and where they needed to be modified. Initial testing validated the approach used in developing the materials and made it possible to concentrate on refinements in later cycles.

* An exception was the district of Dir, where due to lack of supervisors, IMDC was unable to set up the support system needed for the materials in any but the district capital.

The IMDC materials are currently sparking considerable interest in the Federal Curriculum Wing in Islamabad, where there have been suggestions that the IMDC materials be used in federal schools. Similarly, Islamabad is looking into revising the PTC curriculum to add practical training of the type that will support teacher use of innovative materials such as those developed by the IMDC.

EXPANDING THE FUNCTIONS OF THE IMDC

During the lengthy process of developing and field-testing the new instructional materials, the IMDC soon began to outgrow the capacity of the 12-member (one dropped out) staff to carry on all of the activities. Until this time, IMDC staff had served as developers, trainers, researchers, and testers. For short periods during school holidays, staff were augmented by teachers and supervisors who, because of outstanding performance in their districts, had been invited to visit Peshawar and to assist the IMDC staff in writing training units for teachers. Although these temporary staff members proved useful, a more sustained effort needed to be made to establish a teacher support unit within the IMDC.

To cope with the demands for teacher support programs and to develop a new English program (see below), the IMDC invited the Curriculum Bureau to open a branch office (CBB) on its premises in June of 1993. Four positions were approved for the CBB. With these new positions, it was possible for the staff to develop specialized skills that until then had been covered by many staff members. Of the new CBB staff, one now specializes in English program development, one in materials-specific teacher training, one in testing, and one in evaluation. At the same time, two members of the IMDC staff were trained to become the core of an evaluation unit charged with supervising, coding, entering, and analyzing data brought from the field.

INCREASING TEACHER COMPETENCY

It had become apparent during the field-testing that the new materials might produce even better results if teachers received training in classroom methods, management techniques, and subject concepts needed to teach at the primary level. Therefore, the superior teachers and supervisors invited to spend their school holidays in the IMDC were given a set of the management problems that had been observed in the classrooms and were asked, along with one CBB staff member, to build in-service and preservice training units to help teachers solve these problems. The problems included such issues as how to seat large numbers of children to improve the conditions of instruction, how to use simple audio-visual materials, how to teach young children beginning math and languages, and how to teach effectively in multiclass situations. The teachers and supervisors also assisted the regular staff in developing teacher support materials that included alphabet and

number friezes and plastic blocks* for younger children, topographical maps, a school library consisting of 150 reading passages organized into three learning levels, and supplementary math materials for grades one through five. These materials all have accompanying instructions to help a teacher use them in normal classroom instruction.

About this time, also, the results of a study of teacher subject content knowledge conducted as part of PED revealed glaring deficiencies in teacher understanding of primary subjects. To correct this deficiency, the CBB staff, assisted by the visiting ASDEOs, prepared teacher training units in beginning math and science and beginning reading based on the IMDC Kachi materials, separate units on math concepts found in the rest of the primary curriculum, and units on Urdu and Pashto language development, including reading, writing, speaking, and comprehension. As the interactive radio program (IRI) described below was developed, a unit on English as a second language was also prepared.

General subject content and methods training. These subject content units were introduced into the GCETS in November 1993. In the beginning of the school year, the entering PTC students in the 18 working GCETs were given a pretest in the basic primary subjects — math, science, Urdu, and Pashto. At the end of the test, their instructors were trained in IMDC/CBB subject content units and primary instructional materials and were asked to incorporate them in their teaching during the PTC course. The new math and language units were based on the revised curriculum objectives in language developed, with PED assistance, in the Curriculum Wing of the Ministry of Education in Islamabad.

The PTC pretest scores reinforced the results from earlier tests of teacher and student content knowledge that math and science were especially weak. In follow-up visits to the GCETs in February 1994 to motivate instructors to use the subject materials, CBB personnel presented the pretest scores to instructors and principals, discussed with them how they were using the units, and administered a short quiz to the students in math and science to demonstrate some of the weak areas. A third visit in the spring of 1994, which was timed to precede the student practice teaching period, provided training for the GCET instructors in the new classroom management units and IMDC supplementary reading and math materials, blocks, and friezes for primary classes that were designed to keep children busy while teachers worked with other groups or classes. The training was attended by ASDEOs and LCs from the local area who would eventually be training teachers in the use of these new support materials.

In June of 1994, the CBB staff again visited the GCETs to administer a posttest to the same students to determine whether their content knowledge scores had improved by the end of the year of PTC training. The results will be communicated to the GCETs instructors in a workshop in the Fall of 1994 to prepare them to take over the pretesting and posttesting of students.

* The plastic blocks were developed independently by one of these superior teachers, and IMDC helped in producing them on a large scale.

ENGLISH (IRI) PROGRAM

During the Fall of 1992, the Minister of Education asked PED to develop an English language program for the primary level. Soon thereafter in November, a small field study was conducted in 11 classes of five schools of the Peshawar area using an interactive radio program designed for Kenya and rerecorded using Pakistani voices (a decision made by the Pakistanis). The purpose of the study was to test the suitability of using an Interactive Radio Instruction Program in NWFP. The study indicated that changes needed to be made before the IRI program could be successfully adapted for use in Pakistan. Most significant in terms of developing the program were three points, that music would have to be removed, that the program could not assume English competency in primary school teachers, and that the radio lessons were more effective when used with older primary children.

As a result of this trial, it was decided to produce three levels of English, for classes three, four, and five. Each level would include radio lessons, student workbooks, and teachers' guides. A complete level would consist of 120 lessons and one 20-minute lesson per day, with ten minutes of workbook time for reading and writing practice after the radio lesson. The lessons were to be broadcast by Radio Pakistan on days when schools with varying holiday schedules were all open simultaneously. The teacher's guide would translate the new vocabulary and word structures for each lesson into Urdu and prepare the teacher for any actions she or he might need to take before or during the lesson. In addition, an alphabet and numbers' workbook for Class II was developed to prepare children for reading and writing before they were formally introduced to the three levels of the radio program.

The IRI work in the IMDC was supervised by the Curriculum Bureau Branch staff: one prepared the scripts based on a revised set of curriculum objectives while another prepared the teachers' guides and supervised the development of workbooks by IMDC staff. The lessons were prerecorded in the studios of Radio Pakistan, with the help of two producers assigned to the job. The staff of the broadcasting station were trained under the supervision of an expert provided by PED. The lessons were recorded on cassettes, sets of which were provided to schools in areas where reception was poor.

When the 30 lessons were ready in draft, they were tried again in a small group of schools in the Peshawar area and again revised during the summer holidays. Among the revisions recommended during this trial were even greater simplification of teachers' instructions in the radio lesson, a teacher's guide that was easier to understand, and an improved workbook. A set of ten 15-minute IRI training programs for teachers covering the first 30 student lessons was also developed and recorded.

When Level One was finally finished, the program was introduced to a larger sample of 300 schools in all of the districts and in many of the subdistricts of NWFP. Each school received a radio, two sets of batteries, the teacher's guide, student workbooks, and sometimes cassettes of the lessons when radio reception was poor. Master trainers were given instruction in Peshawar

and asked to train supervisors and experimental teachers in their districts. IMDC staff administered achievement tests twice yearly in the same way that IMDC materials were tested. To simplify this procedure, IRI was introduced in a subset of IMDC experimental schools.

Radio Pakistan began broadcasting the daily lessons in mid-September 1993. Student lessons were timed to coincide with the end of the school break so that the teacher's program could be broadcast before the lesson and during the break. Thus, the teacher program was broadcast at 10:45 a.m. for 15 minutes; there was 5 minutes of news and the IRI lesson began at 11:05 a.m. and continued until 11:25 a.m., after which there was a ten-minute workbook practice organized by the teacher.

The program was well-received in the schools as well as among education officials both at the provincial and federal levels. The results of the first testing have also been high in most schools. The Federal Curriculum Wing is now talking about writing a new English curriculum based on the IRI lessons and possibly extending the program to all of Pakistan. If the Pakistan Broadcasting Corporation in Islamabad broadcasts the programs to the whole country, this approach will help resolve the problem of poor reception in some areas of NWFP because of the stronger capacities of the federal radio facilities. By the time the PED Program is finished, three levels of English will be completed. In September 1994, levels one and two will be broadcast, the first level to all schools in NWFP and the second level for use by the 300 experimental schools who have completed Level One.

TESTING CELL

The IMDC/CBB has helped the National Education Assessment Program (NEAP) develop test items for Urdu and Pashtu in classes three and five and has provided a location and logistic support in the form of testers, coders, and data-entry persons for the annual achievement testing.

WORKSHOPS

Many of the IMDC's activities have started with a workshop to develop the skills of those who were to be participating in the activity. The Center expects each workshop to contribute to the objective of implementing a more effective instructional program and most have some follow-up activity to ensure the impact. Among the workshops in which the PED consultants and IMDC staff have participated are the following:

Curriculum writers. Volunteers were recruited from B.A. and B.S. primary school teachers with five years of teaching experience. They came together to analyze the national curriculum and derive instructional objectives for classes Kachi through three of the primary level. From these volunteers, the ones with the most potential were recruited to form the IMDC staff.

Curriculum objectives. With the IMDC of Balochistan, and at the request of the Curriculum Wing in Islamabad, the NWFP IMDC has developed improved instructional objectives derived from existing national objectives for subjects in Kachi, Pakki, Class II through Class V. This is the first time instructional objectives have existed for the Kachi class.

Annotated teachers' guides. A workshop was given for the Textbook Board in how to develop teachers' editions of student textbooks. Also attending were other donors, specifically the Pak-Germans, who assisted in training the participants.

Formative evaluation. A workshop in the formative evaluation of Textbook Board materials was given to TB, IMDC, and UNICEF PCRП staff from the Curriculum Bureau.

Testing. A workshop was given in the Curriculum Wing to launch the NEAP testing program. A second workshop was held in NWFP to train the Provincial Curriculum Bureau and to share materials.

Supplementary materials development. In cooperation with the Textbook Board, writers prepared supplementary reading materials for primary classes.

SUMMARY

In less than three years, an IMDC with the associated CBB has been established and the staff trained in the skills required to put in place a quality primary program for NWFP. To summarize, the major accomplishments of the IMDC and the CBB include:

- ◆ Instructional materials for Kachi, Pakki, second and third classes, including student texts, teachers' guides, and instructional aids
- ◆ Supplementary teacher support materials in reading and math for classroom use
- ◆ Preservice and in-service teacher training units in practical classroom management and subject content skills
- ◆ Materials-specific training of teachers and supervisors in 21 districts and 750 schools
- ◆ Assessment and monitoring systems to ensure continuous improvement of materials and the accountability of responsible staff
- ◆ Development of a three-year interactive radio program.

The IMDC and CBB functions have been integrated to focus all efforts on improving student learning. It will be important to continue this supportive link between the components of materials development, assessment, supervision, and training. IMDC's policy has been that innovations are tentative until they have been tested under actual conditions in limited experiments, or until new programs appear that fit the requirements of the education system better. The IMDC is now equipped to handle most of the R, D, and E functions that are implied by this approach. The IMDC is, however, still a fragile institution, requiring dedicated leadership, certain policy changes, more staff, and guaranteed access to resources before its position and functions will be secure within the Directorate of Primary Education.

BALUCHISTAN INSTRUCTIONAL MATERIALS DEVELOPMENT AND TRAINING CELL

A CASE STUDY

Under the funding of PED, work on instructional materials development began in Baluchistan on a modest scale. It began with assumptions being made by project personnel and some provincial government officials that were later revised. These assumptions were as follows:

1. Textbooks could be written only by the existing cadre of authors and could be produced only under the existing structure of the Baluchistan Textbook Board. Any efforts to reform the textbooks would need to be initiated by the federal government.
2. Only materials that were in addition to the existing textbooks could be developed for use in the schools.
3. Curriculum for kindergarten (Kachi)-level education did not and would not exist. Therefore, any textbooks produced for Kachi would not be recognized as part of the educational system and could not be paid for out of recurrent funds.

As a result of these assumptions, early efforts designed to meet program goals in instructional materials development were limited to a few research studies and the development of classroom support materials. The first support materials produced for trial in the primary schools were jointly funded by UNICEF and USAID. These were in the form of flash card sets for the teaching of auditory and object recognition skills to Kachi-level children. Sets included picture and alphabet cards, student workbooks, teachers' guides, and bingo games. The sets were produced in limited numbers and were introduced on a pilot basis throughout Baluchistan.

Research studies on school and teacher characteristics and causes of dropout at Kachi resulted in identifying various characteristics and situations that were unique to the primary schools throughout Balochistan. These were as follows:

1. The majority of schools are single teacher, multigrade.
2. The active involvement of pupils in learning is often restricted.
3. A considerable age spread exists in students who are attending the schools.
4. The largest percentage of students in primary schools are Kachi level.
5. Large numbers of teachers are untrained.
6. Textbooks are the only medium used to support teacher lectures in the classroom.
7. The effective textbook life in the classroom is short, approximately three to four months.

In early 1992, Balochistan government officials were brought together to discuss the needs and constraints for future instructional materials development for Balochistan based on the earlier identified situations. These meetings were attended by the Chairman of the Balochistan Textbook Board, the Director of the Bureau of Curriculum and Development, Additional Director of Primary Education, select deputy directors, and assistant directors. The meetings were chaired and facilitated by the Technical Adviser for Curriculum and Instructional Materials Development, PED. During these meetings, past projects and efforts that focused on developing supplementary materials were reviewed. These included a review of the learning modules prepared by the World Bank PEP-II Project and the primary-level teaching kits.

These discussions always ended with the realization that supplementary materials provided to the primary schools in Balochistan were not being used. In fact, most teachers felt no obligation whatsoever to use these materials either in their teaching preparation or in their daily teaching activities. Even in those schools where teachers had been fully trained in the use of the modules or kits, they were not being used.

The conclusion after many meetings was that if Balochistan wanted and needed to see change in teacher and student behavior, it would have to change the textbooks, continue efforts in developing Kachi-level materials and continue lobbying for the recognition of Kachi as an official primary-level class. The obstacle to this resolve was that no existing government organization had components that focused solely on primary education instructional material issues. Both the Bureau of Curriculum and the Balochistan Textbook Board are responsible for training and book development from Class I through teacher training, with proportionally little time being devoted to primary-level issues. Staffing and funding in those organizations were unavailable.

ESTABLISHMENT OF THE BIMDTC

It was proposed and accepted that a separate organization attached to the Directorate of Primary Education be established with the sole responsibility for developing and producing primary-level

instructional materials, thereby serving as a service organization to both the Bureau of Curriculum and the Balochistan Textbook Board. The Balochistan Instructional Materials Development and Training Cell (BIMDTC) was established to meet those needs.

BIMDTC officially began its operations in August 1992 with four people who served as the core staff for the Cell. The guiding rule behind any operations to be undertaken by the Cell was that everything that was developed must be tested in the classroom by both teachers and students, revised accordingly, tested again, revised again, and then produced in final form for distribution to schools. This approach would form the basis for the instructional development design system that is operational today. In addition, BIMDTC would serve as the mechanism through which studies to support decision-making with regard to instructional materials for primary education would be made. The operations of BIMDTC were to start with limited focus so as to determine the capabilities and directions of its future activities.

LANGUAGE OF INSTRUCTION

In 1989, the Government of Balochistan exercised its provincial right to dictate the language of instruction used in its primary schools throughout Balochistan by implementing a draft bill "to prescribe measures for the use of mother tongue as medium of instruction." Until 1990, all of the textbooks for primary school education in Balochistan were produced in the Urdu language. To implement the policy regarding the proposed Balochistan Mother Tongue Use Act it was necessary to have textbooks published in each of the designated mother tongue languages (that is, Pashto, Balochi, and Brahvi), in addition to Urdu. It was decided that the texts for primary education would be available to the schools according to the following schedule: 1990 - Kachi Class, 1991 - Class I, 1992 - Class II, 1993 - Class III, 1994 - Class IV, and 1995 - Class V.

A number of serious problems were inherent in this policy, and the Minister of Education was repeatedly asked to review, and ultimately, to rescind the policy. A meeting of all district education officers was called to discuss this issue in preparation of a report for the Secretary of Education, Balochistan, to present to the Minister of Education. That meeting was facilitated by BIMDTC staff and the Technical Adviser.

The meeting of the DEOs and subsequent surveys in select villages revealed that, in fact, the majority of the teachers in Balochistan could not read and write in a language other than Urdu, and parents preferred that their children be taught in Urdu so as to make them more competitive in the workplace and for further education. The reality was that books were being supplied by the government to the schools in Pashto, Balochi, and Brahvi, and the parents and teachers were going into the market and purchasing books in Urdu. The message sent forward to the Minister of Education was that teaching children in their mother tongue language was, in some cases, a desirable approach to teaching and learning. This is only true, however, when the teachers are able to read and write in that language and when parents view the situation as valuable to the life-long success of their child.

On November 8, 1992, the Secretary of Education, Balochistan issued a statement that by unanimous decision of the Provincial Cabinet "the local languages shall be adopted as optional..." In addition, a directive was sent to the Balochistan Textbook Board to take immediate action to come into compliance with this Cabinet decision. As of January 1993, all instructional materials (including all textbooks) developed and produced for the Province of Balochistan will be in Urdu, the national language of Pakistan.

PRELITERACY MATERIALS

The first materials development activity of BIMDTC was to test, revise, and produce a set of preliteracy materials in Urdu based on the flash card kits earlier produced on a pilot basis. Training and testing was carried out in ten schools in District Loralai (seven boys' schools and three girls' schools). In addition, the materials were made available to the teachers undergoing training in the Accelerated Teacher Training Program and in District Sibi (where other materials training for a federal program was taking place). Feedback was collected on the effectiveness of these materials, and the materials were revised accordingly. During the revision stage, six schools in District Quetta (three boys' and three girls' schools) were used to test any changes that were made in the materials.

Concurrently, BIMDTC was becoming equipped with complete desktop publishing computer capabilities. Initially, the equipment included two Macintosh IIsi computers with two-page black and white monitors, two graphic scanners, two laser printers, and a complete compliment of word processing, page layout, and graphics software, including Urdu word processing capabilities. The BIMDTC staff received extensive training on the equipment and in the techniques and practices of layout and design.

After the final testing of the preliteracy materials, the BIMDTC staff used their newly developed skills in desktop publishing to produce all of the materials to prepress quality. This task included designing new formats, creating new illustrations, and using the Urdu software to create the Urdu characters and the text for the teachers' guides. The result was a tested, revised, and produced set of Urdu auditory recognition materials to be used as introductory literacy materials. These materials include a set of 108 flash cards, a set of 24 bingo game cards with 216 game pieces, and two pamphlets that guide the teacher on the use of these materials. To date, 8,000 sets have been produced and distributed to schools throughout Balochistan, where teachers have been trained through the Accelerated Teacher Training Program. Another 8,000 sets are in the production process.

The work on flash card kits helped BIMDTC, the Bureau of Curriculum and Extension, and the Balochistan Textbook Board to realize that the process of developing, testing, revising, testing, revising, and production could be achieved with locally trained staff and was essential to the development process. In addition, this activity served as a training period for the BIMDTC staff so that they could effectively assess their capabilities and limitations as a development and desktop publishing environment.

TEXTBOOK REFORM

Throughout this time, the government officials and Technical Adviser continued to meet on a regular basis to determine what approach to take for instructional materials development in Balochistan. Given the situations and characteristics revealed in studies and field visitations, it became increasingly more apparent that a complete textbook reform for primary-level subjects in Balochistan was necessary.

A reform proposal and schedule was presented by the Government of Balochistan to the Joint Education Adviser (JEA), Curriculum Wing Islamabad at a meeting held in Quetta on January 13, 1993. This reform proposal was created as a joint venture by the Directorate of Primary Education, the Bureau of Curriculum and Extension, and the Balochistan Textbook Board. The focus of the meeting was to determine what, if any, policy obstacles existed at the federal or provincial level that might prevent the proposed reform efforts from being accepted at an operation and implementation level.

The JEA responded by stating that no policy obstacle exists that would prevent this type of reform from taking place. He did state that the rules set forth by the Federal Supervision of Curricula, Textbooks Maintenance of Standards of Education Act, 1976 would need to be adhered to. In particular, he noted that the three basic guidelines were as follows:

1. National curriculum objectives and course proportions and balances as set forth by the Federal Ministry of Education should be adhered to.
2. Any reform must fit within the curriculum framework of the Federal Ministry of Education.
3. Any reform must adhere to the major policies of the Government of Pakistan, its religious, economic, and social values.

In addition, it was noted that:

- ◆ There should be an initial phase within Balochistan's textbook reform to include a complete review of the Federal Curriculum I through V.
- ◆ A homogeneous grouping of districts should take place before pilot schools are selected so as to keep the number of selected schools manageable and to ensure an equitable representation of cultural, ethnic, and geographical characteristics of Balochistan.
- ◆ Writing teams should be used, in a workshop environment, for developing new textbooks.

- ◆ Textbook development work already undertaken by the Balochistan Textbook Board, the Primary Education Curriculum Reform Project (PECRP funded by UNICEF), and work done in other provinces should be used as reference materials in developing new materials. There should be no obligation on the part of the writing teams to incorporate anything but the most appropriate portions of those materials.

The textbook reform schedule which was adopted and approved as a result of this meeting, was as follows:

1993	Review of federal curriculum Writing and development of Class I and II materials
1994	Pilot testing of Class I and II materials Writing and development of Class III materials
1995	Revising and editing of Class I and II materials Pilot testing of Class III materials Writing and development of Class IV and V materials
1996	Implementation of Class I and II materials Revising and editing of Class III materials Pilot testing of Class IV and V materials
1997	Implementation of Class III materials Revision and editing of Class IV and V materials
1998	Implementation of Class IV and V materials

Also approved at that time were the types of items that would be developed during the reform. These items include student-centered textbooks, teachers' guides, and supplementary materials. Student-centered textbooks were defined as books that include activities and lessons for students to perform and can be easily adaptable to both student-directed or teacher-directed learning. Teachers' guides should be designed to assist the teacher in organizing, managing, and teaching. They should be written simultaneously with the textbooks, and one guide should be prepared for each textbook. Supplementary materials should be provided as additional reading and activities for the students. They should be based on the new textbooks and should be referenced in the same. It is anticipated that a majority of these supplementary materials might be purchased from existing materials available in the market.

FEDERAL CURRICULUM REVIEW

At the request of the Joint Education Adviser (JEA), Federal Curriculum Wing, and as reflected in the approved schedule for reform, Balochistan conducted a review of the existing curriculum documents produced for primary-level education.

This review resulted in seven recommendations and a draft curriculum document (Kachi through Class V), signed by all provincial officials involved in the review, being presented to the JEA for consideration. The recommendations were as follows:

1. Curriculum for all subjects should be incorporated into one federal curriculum document, which should be prepared in both Urdu and English.
2. Contents of such a document should include national curriculum goals, definitions for all general terminology used in the document, and subject curriculum for classes K through V.
3. Each subject curriculum should include aims of the subject, general learning objectives, and specific learning objectives by unit, by class.
4. Kachi should be recognized as a class level, and specific learning objectives should be included for Kachi in mathematics and language.
5. Specific learning objectives for Class I, II, and III science, social studies, Urdu, and Islamiyat should be included in each individual curriculum and not consolidated under a subject called Integrated. The Integrated books should be written to incorporate all of these objectives.

The recommendations, along with the draft document, were then presented by the JEA to a select group of government officials representing all four of the provinces in Pakistan. The result was acceptance of all recommendations and the development of a Revised Draft Curriculum Document for Primary Education (Kachi through Class V). The revised document was then reviewed by a number of federal curriculum officers. It is currently in the process of final revisions and will be submitted to the Federal Minister of Education in 1994 for approval. Balochistan was instructed to use the revised draft document as the basis for their textbook reform efforts.

The acceptance of the recommendations and the draft curriculum document resulted in a slight change in the textbook reform schedule for Balochistan. In 1993, materials for Kachi and Class I would be prepared. In 1994, materials for Class II and III would be prepared, and after that the schedule would be as originally proposed.

TEXTBOOK DEVELOPMENT

The textbook reform efforts for the primary-level textbooks in Balochistan officially began on April 1, 1993. This date marked the beginning of a new way of developing, writing, testing, and producing student textbooks and teachers' guides. Nine primary school teachers were attached to BIMDTC to work along with the two BIMDTC subject specialist, to form the first two writing teams. One writing team was responsible for developing and writing mathematics textbooks and teachers' guides for Kachi and Class I. The other team was responsible for developing and writing an Urdu textbook and teacher's guide for Kachi and an integrated textbook and teacher's guide for Class I.

All materials were written and tested in a workshop environment. The new materials are unique for Balochistan in that they are highly student-centered and provide a variety of activities for the students to perform, either with their teacher or on their own. Every lesson, activity, and story developed by the writing teams went through the same development process:

- ◆ After initial development of a new idea, lesson, or activity, the writing team member taught that lesson to the other members of the team.
- ◆ Writing team members prepared critiques of the lesson and made suggestions for change and modification.
- ◆ The writing team member revised the lesson accordingly and represented it to the group.
- ◆ Once the lesson was approved, it was ready for informal testing in a classroom environment.
- ◆ The lesson was taught by the writer to a group of Kachi or Class I children. The other members of the team and the teacher observed and provided suggestions for revision.
- ◆ The lesson was revised accordingly, and pages for the teacher's guide were developed to accompany the lesson.
- ◆ The revised lesson and teacher's guide were taken to another primary school for testing. The teacher was given the teacher's guide pages and asked to teach the lesson while the writing team members observed.
- ◆ The lesson and teacher's guide pages were revised according to the feedback and the lesson was checked once more by the entire writing team.
- ◆ The lesson was finally ready to be included in the textbook.

Involving students, teachers, and writing team members in the testing process helped to ensure that the materials being written were, in fact, practical and workable in an actual classroom setting. The writing teams were trained to write materials that adhered to the federal curriculum objectives of Pakistan and to write them according to sound educational practices. This approach included training in the awareness and development of scope and sequence and content building from simple to complex, all within the knowledge of the developmental level of the child. Writing teams were also trained in strategies and techniques to incorporate gender awareness, health and sanitation issues, and environmental concerns into the content of the textbooks and teachers' guides through both words and illustrations.

An illustrator was employed to work directly with the writing teams. Every illustration used in the new materials is original and appropriate to the Balochistan context. More than 500 illustrations have been created for use in the Kachi and Class I textbooks. For the first time, cartoons are being used to attract attention of the student and to add an element of fun to the learning process. A complete set of the illustrations has been compiled into "clip art" books and distributed to each of the instructional materials development centers in Pakistan. The illustrations can be used as they are (photocopied, sized, and pasted-up) or a digitized image can be supplied by BIMDTC so that others can access the illustrations through their desktop publishing environment.

After all newly written materials were tested and revised and illustrations were created, the text and illustrations were entered into the computer. Complete formatted pages were proofread by the writing teams and by select subject specialists from the Bureau of Curriculum and Extension. Revisions were made, and camera-ready copies were prepared for submission to a printer for production of pilot-test copies. Two textbooks for Kachi and two textbooks for Class I, with accompanying teachers' guides, have been prepared to this stage.

PRINTING PROCUREMENT

With the preparation of all prepress materials being prepared by BIMDTC, it also became necessary to alter the way in which local publishers are employed for producing textbooks and teachers' guides. The current practice of the Balochistan Textbook Board is to hire publishers to typeset the manuscript, provide illustrations, format all book pages, and print the books. A predetermined percentage of the Board's printing needs is distributed among publishers who are operational in Balochistan and who have been prequalified by the Board. Prequalification is based on the number of years in operation, the type of equipment, and the number of employees, not on the quality of materials produced. No competitive bidding process is used by the Textbook Board, and no publisher is required to provide printed samples either prior to qualifying or prior to being hired.

Through the development and production of pilot materials, BIMDTC is helping to establish and test new printing procurement procedures that will be adopted by the Balochistan Textbook Board for producing of all future primary-level textbooks. A sample tender notice has been prepared to

serve as the template for all tender notices regarding the hiring of printing services. This tender notice will be made available for local competitive bidding (nationwide) and will not be limited to only prequalified publishers within Balochistan.

Sample bidding documents have also been developed. These include questionnaires to be completed by all bidding publishers requiring them to provide information regarding their capabilities and the paper and binding specifications to be used on the document to be printed. On the due date set by the tender notice, all bidders will be required to submit printed samples of their work using prepress materials provided by BIMDTC. Bidders must also submit proposed work plans, time schedules, and per-unit breakdown of all costs.

All information submitted as per the bidding documents are compiled into a comparative statement. Those publishers who do not submit all of the required information and samples will be immediately eliminated from the bidding process. Publishers who submit a complete set of information and samples will be compared according to quality, cost, and time. It is anticipated that the efforts put into revising printing procurement procedures will force improved quality of textbooks produced for the primary schools in Balochistan. New bidding practices will help to reward those publishers committed to a quality product and help improve the overall standard of printing and publishing within the province.

PILOT TESTING

A formal pilot test of the newly developed materials is taking place in 1994. This testing involves Kachi and Class I students, teachers, and supervisors in 90 schools throughout Balochistan. The schools are a representative sample of the gender, cultural, ethnic, and geographical characteristics of Balochistan. The pilot testing is being conducted with the aim of trying out the newly developed materials in "real time" so that the merits and demerits of the materials are determined. More specifically, the pilot testing is designed to:

1. Assess the effectiveness of newly developed instructional materials concerning federal curriculum objectives.
2. Assess the effectiveness of the teachers' guides regarding the ease of use and suitability to teaching.
3. Identify flaws in the content and activity sequence of the materials.
4. Ascertain and describe the opinions of teachers and supervisors toward the reform.
5. Identify the administrative and social problems associated with implementing the new materials.

6. Provide suggestions to modify the new materials prior to provincial implementation.

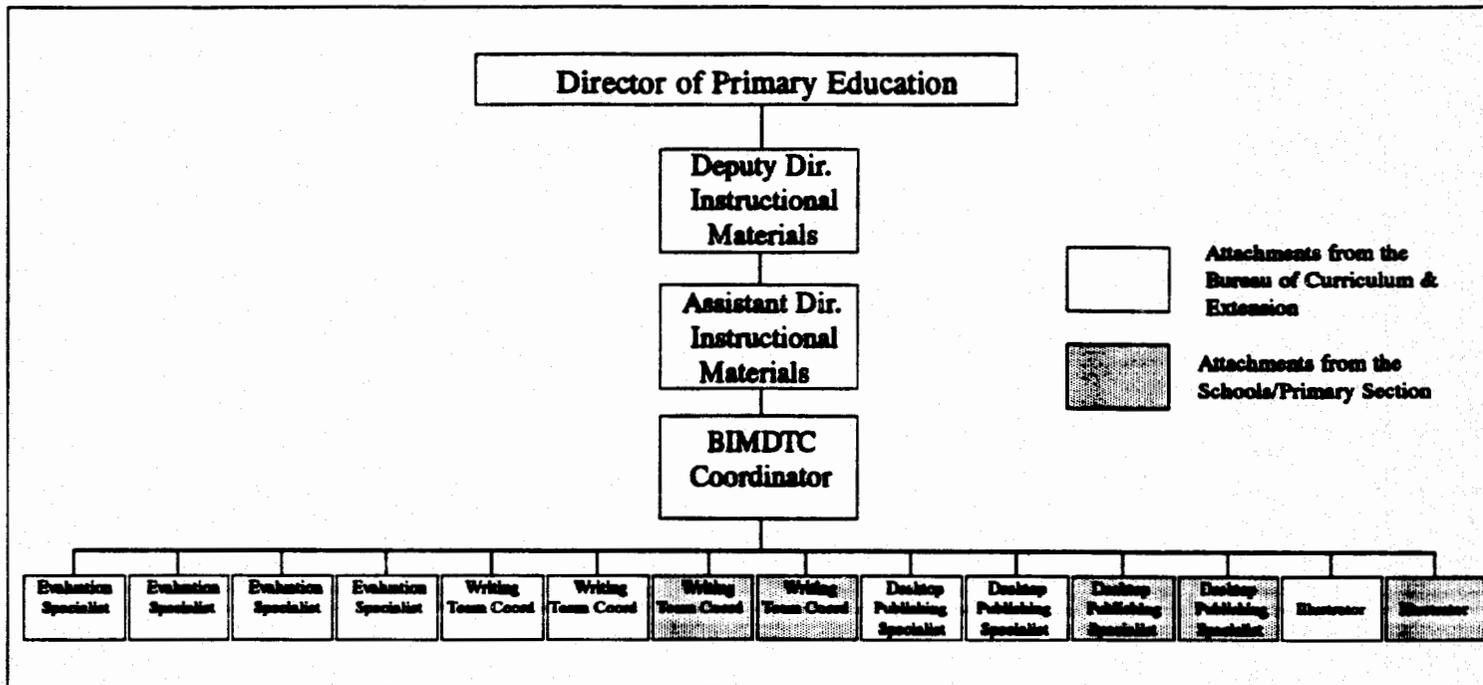
To foster linkages with other educational institutions, the Directorate of Primary Education has contracted the Department of Education, University of Balochistan, to serve as the monitoring agent for the pilot-test activities. Faculty members with subject area and evaluation specialties have worked closely with the BIMDTC Deputy Director and the writing team members to develop a complete set of instruments to be used during pilot testing. These instruments include classroom observation forms, supervisor, teacher, parent interview questionnaires, and criterion-referenced achievement tests. Pilot-testing of Kachi and Class I materials will continue throughout 1994. Results of the pilot test will be analyzed and provided to BIMDTC for revision of the textbooks and teachers' guides accordingly.

BIMDTC personnel play an active role in the pilot-testing activities. As mentioned, they assist in developing all of the achievement tests and interview questionnaires. In addition, they are responsible for training all supervisors and teachers in the use of the new materials in the classroom. During the pilot testing, the type and duration of teacher training required to effectively use the new materials in the classroom will be tested. Teachers from 30 of the pilot schools will be given in-service training on the new materials for the maximum number of days allowed by the government (usually ten days). Teachers from 30 of the pilot schools will be given in-service training on the new materials for half of the maximum days allowed by the government, and teachers from the remaining 30 schools will be given only a brief one-day orientation to the new materials. Analyzed information from all questionnaires and tests will be compared, to the amount of training received by the teacher, to determine a scheme for teacher training on all newly developed textbooks and teachers guides in the future.

FORMALIZING THE ORGANIZATION

In August 1993, after the instructional cell had been in operation on an ad hoc basis for nearly one year, it was time to formalize the organization and to see that it was firmly attached to the Directorate of Primary Education. The Director of Primary Education, the Director of the Bureau of Curriculum and Extension, and the Chairman of the Balochistan Textbook Board worked along with the Technical Adviser and Program Associate to determine the best organizational structure. It was determined that BIMDTC should continue as a part of the Directorate of Primary Education and that it should be staffed by personnel from the Bureau of Curriculum and Instruction and the primary-level teaching cadre. It was also determined that the staff should be organized in such a way that the core group could be configured to promote the needs of four writing teams. With this in mind, the organizational chart for BIMDTC is as follows:

**Figure 6.1. Current plan of organization, Balochistan
Instructional Materials Development and Training Cell**



Nine of the line personnel are subject specialists from the Bureau of Curriculum and Extension, and five are primary-level teachers. All 14 are trained in the various aspects of materials development, testing, and implementation. When writing teams are convened for the writing of new books, each team will have one evaluation specialist, one writing team coordinator, one desktop publishing specialist, and one illustrator assigned to work with them. The 14 line personnel and the writing teams are organized, supervised, and facilitated by the Deputy Director and Assistant Director for Instructional Materials. Job descriptions have been developed for each of the BIMDTC positions.

COORDINATION OF DONOR SUPPORT

UNICEF had been funding the Primary Education Curriculum Reform Project (PECRP) since early 1989. This was a project initiated at the federal level to allow each province to do some experimental development work in producing integrated textbooks that would be localized to select provincial districts. In Balochistan, this work was being done for District Sibi. When UNICEF began funding PECRP in Balochistan, there was not a Directorate of Primary Education and the province, as a whole, had not made a commitment to an overall textbook reform project for primary-level classes.

With the establishment of the Directorate of Primary Education came the commitment to coordinate all donor initiatives for primary education in Balochistan. UNICEF was also realizing the need to support overall provincial efforts in education rather than projects designed for only one or two districts. These two factors were the impetus behind merging PECRP personnel and efforts into the larger textbook reform activities.

As of October 1993, PECRP in Balochistan no longer existed. The Deputy Director of that project became the new Deputy Director, Instructional Materials under the Director of Primary Education, Balochistan. It was agreed that this position would be a permanent part of the Directorate of Primary Education and on the recurrent budget for the Directorate by July 1994. In addition, the two vehicles purchased for PECRP by UNICEF were handed over to the Directorate of Primary Education for use by BIMDTC. UNICEF now has only one project document to support curriculum and instructional materials development in Balochistan. The document is titled Textbook Reform Project and is a component part of the overall reform being undertaken by the province. UNICEF's contribution to the reform is on an average of \$60,000 annually for the two years, 1993 through 1995.

ADDITIONAL ACTIVITIES

It is increasingly difficult to provide a chronicle of BIMDTC activities because they are overlapping and diverse. A few areas of development and influence that do not neatly fall into the chronological flow are described below.

Multigrade classroom design. Both USAID and the World Bank have been supporting efforts for the construction of multigrade classrooms throughout Balochistan. A simple field test was conducted to determine the appropriate configuration and size of a multigrade classroom to meet the unique characteristics of the majority of the primary schools in Balochistan. The result is a new design for the construction of all future multigrade classrooms in Balochistan.

Personnel training. Although most training is continuous and takes place within BIMDTC, some exceptions are evident. All of the BIMDTC writing team members have traveled to Peshawar to learn about NWFP IMDC operations. This step was taken to strengthen the exposure and knowledge of the Balochistan staff members. From mid-September through mid-December 1993 seven persons attended a three-month training program in desktop publishing for textbooks and instructional materials. The participants were comprised of two men and five women, three of whom were representing the Balochistan Textbook Board and four representing BIMDTC. The training took place at a small publishing company in Denton, Texas, whose sole emphasis is on desktop publishing techniques for educational materials. The participants received training in both computer hardware and software as well as in design and development of textbooks and other instructional materials.

Balochistan Education Testing Cell. To accommodate the requests of the newly established National Education Assessment Program (NEAP), Balochistan is implementing some activities on

a pilot basis. A former Bureau of Curriculum and Extension Senior Subject Specialist has been hired to prepare and conduct teacher and student testing in math, science, and Urdu on a pilot basis. The results of the testing will be submitted to NEAP for analysis. It is hoped that the results of this testing will provide appropriate information for future decision-making with regard to teacher training and textbook development needs. The results of this pilot study will be used to determine the need and feasibility of a permanent Education Testing Cell within Balochistan's Bureau of Curriculum and Extension.

Reference library. Within BIMDTC, a reference library is being developed. The library consists of sets of primary-level textbooks from each of the provinces in Pakistan, primary-level textbooks, and teachers guides from other countries, encyclopedias, and miscellaneous reference books. In addition, an extensive set of supplementary readers in Urdu have been collected from throughout Pakistan. A local consultant was hired to identify the content areas of primary education that could possibly be supported by supplementary readers. These areas were identified by subject and by grade level. Books available in Urdu within Pakistan were then matched against the content list and evaluated regarding their language level and suitability. A complete summary report along with samples of each of the books, is now available for use by BIMDTC writing teams.

SUMMARY

In two years, an Instructional Materials Development and Training Cell has been established as a significant component of the Directorate of Primary Education in Balochistan. The major accomplishments of BIMDTC, to date, include:

- ◆ New instructional materials for Kachi and Class I, including student texts, teachers' guides, and instructional aids
- ◆ Organizational structure to provide for the continued development of textbooks and support materials using the writing team or workshop approach to instructional materials development
- ◆ Operational desktop publishing facility, with trained personnel capable of producing quality and attractive prepress materials
- ◆ System of instructional materials development in place, which includes development, testing, revising, testing, and revising prior to production and implementation
- ◆ New printing procurement procedures in place to ensure that local competitive bidding is based on the quality of the product.

Although the accomplishments have been significant, they do not ensure sustainability. Sustainability will come only after continued financial and technical support for these and future

efforts. Support must come at all levels, from the continued recruitment of good, committed writing team members to the commitment on the part of upper management to produce the necessary policy changes and financial commitments to make continued work of BIMDTC possible.

ACCOMPLISHMENTS

Federal Level, Ministry of Education. The nature of USAID/PED as a program, as opposed to a project, put the technical assistance as advisory components within the provincial government structures. As a result, their contribution at the federal level was as an integral part of the government systems and not as outside project personnel. This unique position has been instrumental in bringing about the following reforms:

1. **Curriculum documents.** Collected, reviewed, and analyzed existing primary-level curriculum documents and produced one common primary-level curriculum document with salient features throughout. In the process, changing subject objectives into behavioral terms so that performance outcomes were measurable.
2. **Delineation of federal and provincial responsibilities.** The new curriculum document helped to establish that the federal ministry was responsible for outcome-based objectives while the provinces were responsible for content and methodology of delivery to interpret those outcomes.
3. **Recognition of kindergarten (Kachi).** Within the new primary-level curriculum document objectives have been specified for beginning language and mathematics. This action corresponds with the objectives that are appropriate for the kindergarten (Kachi) level. Moreover, this approach added official legitimacy to textbook development for Kachi classes in the two provinces.
4. **Establishment of English.** PED has been instrumental in developing the program and objectives for teaching English in the primary schools. A complete interactive radio instruction program for classes III through V has been developed and tested throughout NWFP and will be available for dissemination throughout Pakistan.
5. **National Education Assessment Program (NEAP).** Through provincial initiatives in developing test items in language, math, and science for classes III and V, the Federal Curriculum Wing established a national testing program. Each province will have a testing cell to establish performance levels of students and teachers based upon federal-level objectives and provincial-level textbooks. These performance outcomes will serve as indicators for future teacher training and curriculum needs of the province.

6. **Illustration resource file.** Through the efforts of an illustrator, an extensive collection of original, localized, illustrations have been produced. This collection is cataloged and available for use by all instructional curriculum development centers throughout Pakistan. It is the beginning of an illustration pool made up of original artwork for primary-level textbooks from throughout Pakistan.

Provincial Level

1. **Establishment of instructional materials development cells.** Within each Directorate of Primary Education there are now operational instructional materials development cells staffed with government officials. The officials are trained in developing of a variety of instructional materials development and testing procedures.
2. **Organizational linkages.** The two principal organizations concerned with primary education, the Directorate of Primary Education, and the Bureau of Curriculum and Extension are working cooperatively through the structure of the instructional cells. Therefore, decision-making becomes a shared responsibility among the users, developers, and producers.
3. **Instructional materials development process.** Development, training, field-testing, revising, and production are now institutionalized processes.
4. **The role of the textbook boards.** Through the newly developed process of instructional materials development, the role of the textbook boards in each of the provinces has been challenged. It has become a concern of the Federal Curriculum Wing to look at new ways and new organizations to produce textbooks and other instructional materials.
5. **Student-focused materials.** The newly developed textbooks actively engage students in learning through guided practice, independent exercises, and a variety of activity-oriented learning.
6. **Development of appropriate supplementary materials.** Annotated teachers' guides, tied directly to the student textbooks, student readers, wall charts, and educational games, have been designed to supplement the textbooks.
7. **Effective teaching methods.** Within the textbooks and teachers' guides, the effective teaching practices have been imbedded, including concept and skill development from simple to complex, patterned learning, and guided practice. Materials take into consideration the developmental age of the child. Examples and illustrations are drawn from the local environment. Issues such as gender equity and the environment are addressed.

8. **Material-specific teacher training.** The development of the new materials requires that teachers be trained in their use. Much of the generic teaching skills will be incorporated in teachers' guides and will be reinforced through training.
9. **Training for instructional supervision.** A redefining of the role of field supervisors has come about through the introduction of the new materials in the classroom. Their job is now one of instructional supervision as opposed to that of inspection. The teachers' guides serve as a supervisory framework for their school visits.
10. **Criterion-referenced testing.** Curriculum-based objectives formed the basis of test items developed for the areas of language, math, and science. These tests are used to assess student performance toward attaining desirable outcomes.
11. **Use of feedback.** Instruments were developed to gather information from the field that could be used in revising textbooks and teachers' guides to meet the needs of the users, students, supervisors, and teachers.
12. **In-house desktop publishing facilities.** One fully operational desktop publishing facility has been used and staff trained to design, format, and produce quality prepress materials.
13. **Capacity-building.** On the job training on a day-to-day basis is a continuing activity within the instructional materials development cells.
14. **Out-of-country training.** Relevant training programs in other countries have been provided to reinforce the knowledge and skills of government officials directly involved in the instructional materials development process.
15. **Cooperation among provinces.** Collaboration between the two provinces and among all four provinces has been undertaken by lateral exchange and federal-level workshops.

CONSTRAINTS

Program efforts were hampered by the following constraints:

1. The original program was extremely comprehensive and designed to be accomplished within a ten-year time frame. Initiating change, institutionalizing programs, and sustaining efforts were difficult to accomplish when the time frame was reduced to four years.
2. Early misconceptions about what was possible at the provincial level led to delays in startup.
3. Overall, PED objectives and initiatives were inadequately communicated to the lower levels of the provincial educational systems, to teachers, and to supervisors.

4. Under the current personnel system within the provincial governments, officials are promoted based on longevity rather than on merit, thereby making it difficult to identify motivated and committed individuals who can bring about change.
5. Practices related to teachers and supervisors concerning leaves, transfers, recruitment, and distribution affect the quality of the program.

LESSONS LEARNED

1. Working within the existing government structure is essential. Working as a program rather than a project has placed the technical assistance directly in the offices of the government which facilitates coordination and cooperation. Progress, however, is often delayed by lengthy bureaucratic procedures.
2. When change is introduced at the grass-roots level, it is embraced because it promotes learning and makes instruction more manageable for the teachers. It is only when the change is institutionalized from a top-down management system, however, that it can be sustainable.
3. The decision-making process needs to be decentralized within the overall educational system so that it can be responsive to the needs of the users.
4. Change is neither rational nor systematic. Planners must take into consideration that it is extremely difficult to plan exactly when and how change will occur.
5. Development program implementors must realize that for any change to occur it must be "owned" by the users. Therefore, they must be willing to relinquish the credit given for change.

RECOMMENDATIONS

Even in view of all of the significant accomplishments that both provinces have been able to realize in a relatively short time, the entire Instructional Materials Development Cell system is still quite fragile. The following are required actions to sustain the efforts of curriculum and instructional materials reform in both NWFP and Balochistan:

1. Support for the IMDCs should be continued irrespective of publishing policies. The IMDCs work as research and development units within the Directorate of Primary Education. They have access to schools and work closely with teachers in the field. It is the only organization solely concerned with issues regarding primary education instructional materials, with no vested interest.

2. Financial support must be allocated as part of the recurrent budget so that development, training, production, field-testing, and revision can continue to be continuous activities of the IMDCs.
3. Retain the integrity of the staffing structure of the IMDCs to continue to include young primary school teachers and subject specialists from the Bureau of Curriculum and Extension.
4. The cycle of development, training, field-testing, and revising should continue before the adoption and full-scale dissemination of classroom materials. This approach implies that no instructional materials will ever become a part of the school system without prior testing in the school environment.
5. A career ladder is needed within the Directorate of Primary Education whereby competent people are not lost to the Secondary Section. A mechanism must exist for promotion within the primary cadre.
6. The desktop publishing capabilities that are in place in Balochistan's IMDC must be replicated in NWFP. This capacity allows for IMDC staff to have control over the layout and design of the newly developed materials, which are integral parts of the development process which enhance both teaching and learning.
7. A testing cell should be established within the IMDCs that is responsible for testing the achievement of students and for providing information to the materials developers about children's performance at all levels so that rational decisions about change might be made.
8. Continue to train and support the supervisory staff so that they are better able to monitor and assist in the learning process. This objective can be achieved through establishing lines of accountability across the system.
9. It is important to establish linkages among the schools, supervisors, and the training institutions so that preservice and in-service training lead to effective instruction in the classroom.
10. Continue cooperation and coordination among provinces so that people exchange ideas and information.

Chapter 7

Teacher Training and Supply



7. Teacher Training and Supply

The Primary Education Development effort stated two main objectives for its provincial programs: to increase the enrollment of primary-age children, particularly females and children in rural areas, and to improve the quality and efficiency of the primary school program. As described in the program's working papers (1989), the central issues relating to teachers were concerned with how to:

- ◆ Increase the supply of teachers to adequately staff the expected expansion in the primary system.
- ◆ Persuade more teachers to serve in rural areas.
- ◆ Attract and retain more qualified teaching staff.
- ◆ Improve training.
- ◆ Ensure that qualitative improvements in instruction reach the classroom.

To address these objectives, a number of activities were planned for the ten-year PED Program, among them:

- ◆ Building Government Colleges of Elementary Training (GCETs) for females with hostel space, as needed, so that every district in NWFP and every division in Balochistan would have one such training institution in proximity to the homes of candidates
- ◆ Increasing the number of girls' middle schools near well-attended primary schools to expand the pool of qualified female teaching candidates
- ◆ Supporting Allama Iqbal Open University (AIOU) middle and secondary degree programs for girls in areas where teachers are needed
- ◆ Changing policies that hinder PED objectives, including those related to the recruitment, appointment, and attendance of staff in primary (especially girls') school
- ◆ Improving the GCET curriculum and training materials to make them more practical and closely tied to implementation of the primary school program
- ◆ Providing teachers with annotated editions of student textbooks that include easy-to-follow, explicit teaching directions for each lesson

- ◆ Furnishing each classroom with an adequate supply of teacher support materials, such as alphabet cards, number cards and number lines, and supplementary reading, math, and science learning materials
- ◆ Providing training opportunities for educators to improve primary education through study tours, short- and long-term training abroad, and in-country short-term training courses, seminars, and workshops
- ◆ Improving teacher support systems through materials-specific training for trainers, supervisors, and headteachers and involving them in the testing of new instructional materials.

To assist in implementing the foregoing objectives, long-term technical advisers were provided for both provinces. In NWFP, the Curriculum/Instructional Materials Adviser assumed the duties of the Teacher Training Adviser, who concluded his assignment in 1993. The reduction in the length of the PED Program from ten to four years, however, prevented a number of objectives from being fully realized.

Because the two provinces stressed different activities, teacher-related components of the PED Program are presented below as separate case studies for Balochistan and NWFP.

TEACHER-RELATED ACTIVITIES IN NWFP

CASE STUDY

In 1990, at the start of the PED Program the most significant teacher-related problems in NWFP were the uneven distribution of teachers and the poor quality of instruction. Policies requiring merit recruitment favored selection of urban candidates who, when appointed to rural areas, exerted pressure on authorities to transfer them to urban posts near their homes. The problems were exacerbated by policies giving urban teachers higher allowances than rural teachers. The teacher assignment approach frequently resulted in imbalances in student-teacher ratios. It was common, for example to find kindergarten classes with more than 100 students.

Many Pakistani educators blamed teachers for the overall problems of quality in the primary program and believed that with more dedication they could provide better instruction. It was difficult to convince them that teachers faced major problems in their classrooms, including inadequate and difficult-to-use instructional materials, excessively large numbers of children, multigrades, and few resources such as chalk or paper. Poor-quality training did little to improve the teaching skills of teachers who themselves were products of a program that had been in decline for years.

Geographical conditions in NWFP, while better than those in Balochistan, still make it difficult to provide education services to many parts of the province. Regarding land mass, NWFP is the smallest province of Pakistan and contains approximately 12 percent (approximately 10 million) of the total population. Because of the more densely settled communities, the province enjoys greater access to urban areas and, therefore, to more services. In the North of the province, and to the East, however, there are formidable mountain ranges that make it difficult, if not impossible, to provide education services in all areas. Some areas, such as Chitral, are blocked during all months except the summer ones from road access to Pakistan. Others, such as Kohistan, have high mountains and deep gorges that make access difficult and they are inhabited by nomadic populations that do not remain long enough in one place to enjoy normal schooling programs.

At the start of the PED Program, it was estimated that the literacy rate in NWFP was 16 percent, compared with 26 percent for Pakistan as a whole. Less than 4 percent of females in rural areas were literate, thereby making it difficult to staff new rural girls' schools with female teachers from local areas. Planners estimated that during the course of the ten-year PED Program the number of primary students in NWFP would double, thereby requiring an additional 32,700 teachers. Most teachers entering the service now in 1994 complete a preservice course, but at the time PED was planned there was a backlog of 36,000 untrained teachers. The training capacity in the province in 1989 could neither meet the increased demand for preservice training nor train the existing teachers. The PED Program set the objective of building training institutions more conveniently located in each district, with hostel space to accommodate rural candidates. Further, studies and education planning documents recommended improving the quality of the training teachers received in NWFP. BRIDGES studies showed, for example, that the students of trained and untrained teachers alike showed the same overall poor results on achievement tests.

GATHERING BASIC INFORMATION

In NWFP, most PED activities started with a background study to determine the details of a problem and to identify potential solutions. As a consequence, studies were conducted concerning the potential for girls' education in rural areas, policies affecting the recruitment and service of teachers, the conditions of classroom instruction, and the subject content classrooms to determine the management and pedagogical techniques that might be most useful to teachers during training. The studies in this section are reported under the relevant topics where they served as the start-up activity.

POTENTIAL FOR GIRLS' EDUCATION IN RURAL AREAS

Human resource survey: Out of concern for the lack of female teachers in parts of NWFP, a study similar to that of Balochistan was contracted to determine conditions affecting girls' education in rural areas. The human resource survey in NWFP collected information in almost 9,000 villages in the 20 districts existing at the time of the survey.

The findings of this survey were similar to those of Balochistan and, as in that province, disproved a number of prevailing beliefs about attitudes in rural areas. The major findings were that a majority of villages reported parents and community leaders who were in favor of providing educational opportunities for girls. Results also showed that there were already almost as many mixed (48 percent of the villages) as single sex (52 percent) classrooms in villages where there were educational opportunities for girls and that three-quarters of the villages provided some form of primary schooling opportunity for boys as compared with only approximately 60 percent for girls. Almost all villages reported some boys attending primary school somewhere, and almost three-quarters reported some girls attending. The attending numbers dropped at the middle school level to 89 percent for boys and 36 percent for girls and at the matric level to 80 percent for boys and 23 percent for girls. Indeed, almost no opportunities existed directly in the village for middle (4 percent of villages with girls to 8 percent for boys), even though approximately half of the villages with girls in primary schools reported that parents would be willing to send their girls to higher levels of education *if* schools for these levels were located in the village, *if* there were a mobile teacher coming to the village, or *if* the girls were transported to the middle schools.

As in Balochistan, the survey conducted in NWFP found that the majority of villages were willing to accept alternative provisions for the education of girls, such as male teachers in Kachi through third grade. About two-thirds of these villages would also accept male teachers for fourth and fifth grades. Almost the same number accepted the idea of coeducation at the primary level. Half of the villages desiring educational opportunities for girls have potential female teachers within ten kilometers. In short, survey findings showed substantial numbers of villages wanted education for girls and were willing to accept alternative arrangements in order to obtain it.

The human resource survey furnished baseline information that could be used to plan for a better location for schools — where they were needed and wanted and where free land or buildings were currently available. It showed that resources could be saved in many villages by opening mixed schools with more readily available local male teachers. If school construction had been assigned priority on the basis of such criteria, it probably would have proved more effective in increasing enrollments. Unfortunately, political influences in NWFP were too pervasive to realize all of these objectives during the short period that the PED Program existed. A number of middle schools, however, were added to existing primary schools in rural areas in recognition of the fact that more rural females needed to achieve higher qualifications if they were to enter the teaching profession.

IMPROVING THE RECRUITMENT AND CONDITIONS OF TEACHERS

Almost every conference concerned with primary education in NWFP noted problems in the recruitment, distribution, and conditions of employment of teachers. A significant part of the problem lies in the policies that exist to control these aspects of staffing. At the start of PED, the education system of NWFP was governed by the Education Codes of 1935. Official rules and amendments, however, had been issued from time to time which were not widely distributed and

were, therefore, unknown to some officials. Even the original codes were unavailable in many education offices. Consequently, many practices took on the character of rules, while actual rules were not implemented, and considerable variety occurred in the way in which the rules were understood and carried out.

Policy study. In November 1991, PED consultants examined the most important rules, regulations, and common practices that determine the recruitment, training, and posting of primary teachers in NWFP. The consultants located existing codes and interviewed officials in provincial and district offices to determine their interpretations and practices in cases covered by the rules. The report identified 20 priority areas where remedial actions or modifications of the codes were likely to lead to more efficient and effective administration of the primary system. The first priority was to prepare a clear and realistic set of regulations concerning the responsibilities, training, posting, and transfer of teachers, supervisors, and administrators who would be available for all concerned officers throughout the system.

Recommendations were organized under headings related to the problems they resolved. The most important were as follows:

- ◆ **To increase the supply of female primary teachers**, the government should remove the existing freeze on hiring, upgrade primary to middle schools, and relax rules limiting teacher recruitment in areas where female teachers are needed.
- ◆ **To ensure staffing for far-flung areas**, plan staffing at the *tehsil* level, relax rules related to recruitment and transfers in favor of local candidates, provide incentives to outsiders when local people are unavailable, equalize allowances which favor urban employment, and modify GCET recruitment in favor of candidates from areas where they are needed.
- ◆ **To retain qualified teachers**, pay teachers according to their qualifications, create advanced degree programs in primary education, and reward good teaching performance.
- ◆ **To improve the quality of teachers' performance**, assess the quality of PTC training, hire AIOU to train untrained teachers, improve supervision, review and change leave policies, and reward teachers for their students' performance.

A handbook of current rules and regulations has been published and provided to all district offices. A committee was formed to review the rules and regulations in 1992 and to consider the recommendations made in the report. They completed their review and submitted a report to the Secretary of Education. A summary of age and training of appointments has been approved so that older males may now teach in female schools, older females may return to teaching after raising their families and may be trained as teachers and appointed in their villages.

PLANNING TEACHER REQUIREMENTS AND DISTRIBUTION

To determine the number of teachers that would be needed for expanding the primary program, a Master Teacher Supply and Training Plan was prepared in 1993 covering both quantitative and qualitative concerns regarding teachers. The report discusses the difficulties of using different project techniques.

ELIMINATING THE BACKLOG OF UNTRAINED TEACHERS

Most teachers in NWFP are now required to have a Primary Teaching Certificate before entering service. Earlier, however, many entered service without this certificate and, at the time PED started, it was estimated that there was a backlog of approximately 36,000 untrained teachers. They also could not advance along the salary scale until they acquired proper certification. These untrained teachers, therefore, were strongly motivated to upgrade their credentials. Approximately 1,000 untrained NWFP teachers at the start of PED were enrolling during their free time, and at their own expense, in the distance training courses of the Alama Iqbal Open University.

University courses. By June of 1993, PED had contracted with Alama Iqbal Open University to train 1,000 in-service teachers to PTC level through contracts. PED was willing to contract with an additional 500, but there was difficulty in recruiting these additional in-service teachers because of their preference course which had no travel requirement (see below).

IMPROVING TEACHER TRAINING

The Primary Teaching Certificate is a requirement for entering teaching service in NWFP. It takes precedence in recruitment over longer academic training, even though BRIDGES studies have shown that the professional training for teachers makes no difference in student learning results and longer academic training does make a considerable difference. Efforts to improve the training of teachers in NWFP began with an in-depth study of two teacher training colleges in the province conducted by Huma Nauman for the BRIDGES Project. Study results showed an appallingly poor program of training, where instructors and principals were often absent, came late, and delivered lectures with little application to the conditions that existed in actual classrooms. Practice teaching was virtually nonexistent, though it featured heavily in the documents of course curricula. Abuses were also apparent in the way in which students were recruited for training colleges. Often politicians nominated candidates — sometimes months after the course began, many of whom were poorly qualified for the work or who came from areas where teachers were not needed.

Teacher content study. In an effort to learn more about the skills of teachers, a major study was conducted of teachers' knowledge of primary subject content. A total of 900 PTC and CT

students in six GCETs (three male and three female) were tested using the PEP-II fifth grade curriculum-based achievement tests in math, science, and Urdu. Tests were conducted at the beginning and at end of the GCET course. In addition, approximately 600 primary teachers from a representative sample of 184 primary schools were tested in four districts.

The major findings among the preservice PTC students, both at the beginning and at the end of the course were that they did not command full mastery of any subject and that they were seriously deficient in math and science. The PTC course, therefore, does not have a major effect on teachers' knowledge of the subject content in fifth grade. In other words, teacher training does not prepare a teacher to teach much of the primary curriculum. The study did show, however, that the longer the academic training of teachers the better their scores on the test. On average, female students scored about the same as males on science and Urdu, while males scored higher than females on math. Females tended to have lower academic qualifications than men and, therefore, when the scores were controlled for qualification, females scored higher than men. This may mean that females are better students than men when they are of the same qualification.

The effective teachers scored approximately the same as the PTC students. Additional findings for their group were that the length of service improved the scores of in service teachers in math and science but not in Urdu. Further, teachers who taught fifth grade scored higher in these two subjects than those who had not taught fifth grade, thereby suggesting that they probably learned some of the subject content while teaching fifth-grade materials. As BRIDGES studies also indicated, for students of these teachers, there was no difference in achievement scores of trained and untrained in service teachers. There were also no differences in scores of teachers who obtained their PTCs from various sources: through normal GCET courses or the AIOU program of the condensed course. They were all equally poor.

The report recommended remedial training of preservice and in-service teachers in subject content knowledge used in the primary program. This training needs to be organized around existing primary textbooks and should ultimately replace the present courses taught in PTC training that cover content. Preservice and in-service courses needed to be linked to avoid duplication and to ensure that both training opportunities are closely tied to the realities that teachers face in classrooms. The Curriculum Bureau in collaboration with the Directorate of Primary Education, should develop a plan to address the problem and to assign responsibility for implementing it.

Through the Instructional Materials Development Cell, PED responded to these recommendations with a number of activities, many of which have been elaborated in the section of this report concerned with curriculum. To quickly summarize the portions of that section that are relevant to teachers and their difficulty with content knowledge, the IMDC:

- ◆ Developed annotated guides with detailed instructions for teaching each lesson of new textbooks, including answers to practice problems
- ◆ Provided instructional materials

- ◆ Developed teacher training units for preservice and in-service training covering the concepts and subject content of the primary curricula.

The IMDC invited the Curriculum Bureau (CB) to open a branch office in Peshawar and assign four staff members to work on developing teacher support and training materials and to carry out field work with the GCETs. These staff, assisted by the IMDC, have conducted pretests and posttests of PTC student content knowledge during 1993-94, have briefed GCET regarding student deficiencies, and have provided supplementary instructional material to support teachers in the field during their practice teaching and later in-service teaching. During training, the CB staff have also brought together district supervisors (ASDEOs and LCs) and instructors in local GCETs to begin developing a more meaningful link between training and classroom teaching.

Classroom management. As noted also in the curriculum sections of this report, the IMDC developed classroom management units for training teachers. Problems in instruction were identified during evaluation studies of experimental materials in almost 800 schools, and exemplary teachers were invited to the IMDC during their holidays to suggest how these problems might be resolved. Their advice was incorporated in short training units for preservice and in-service teachers, and instructors in GCETs were trained in how to use them just prior to student practice teaching.

Changing the PTC curriculum. A preliminary plan for redesigning the PTC curriculum was prepared by the consultant in 1993 but never implemented. The Curriculum Wing had received an Asian Development Bank-funded Teacher Training Project and wished to use that project to redesign teacher training for the entire country. The plan was referred to a research advisory committee to be appointed for the Teacher Training Project.

Strengthening the Curriculum Bureau's teacher training functions. A report was prepared by the teacher training consultant suggesting revisions in the organization of the CB to better cope with training functions. The Secretary of Education formed a committee of officials to consider the recommendations. As a result, a decision was made to augment the bureau staff with 12 new posts in order to divide the bureau into two divisions — one for curriculum and one for teacher training, to allow 50 percent direct recruitment (from outside, not by transfer from secondary), and in time to create two separate institutions, one for teacher training and the other for curriculum. Six new posts were sanctioned subsequently. Four were placed with the IMDC in an operational branch of the bureau.

With the beginning of the Asia Development Bank funded Teacher Training Project, a Provincial Institute for Teacher Education (PITE) is to be established. It is planned that the PITE will replace the bureau's preservice teacher training responsibilities and functions, thereby leaving the bureau with the responsibility for curriculum and in-service teacher training.

CB/Education Extensions Center/GCET staff training. Training was given in "Effective Teaching Practices" to relevant staff of the CB/EEC/GCETs. During the course of PED in

NWFP, candidates were enrolled in M.A. degree programs in the United States, education officials took short courses, and five study tours were conducted.

IMPROVING THE SUPERVISION AND SUPPORT OF TEACHERS

Near the beginning of PED activities, the teacher training consultant was invited to conduct workshops for approximately 500 supervisors (learning coordinators) who had been appointed by the government and had been in service without training.

Learning coordinator master training. In coordination with UNICEF, Learning Coordinator training was conducted in the summers of 1991 and 1992 for the government-appointed in-service LCs who were not provided by PEP-II. By the end of 1992 fiscal year, a second round of LC master training was completed, and the third round was planned for completion in August 1993. The second round also included PEP-II LCs as participants. Training materials for these courses were developed by the consultant. They included revised "Effective Teaching Practices" and "Generic Teaching Skills" packages, which contained units on "Individual Student Differences," "Motivation," "Higher-Level Thinking Skills," "Classroom Management," and "Problem-solving." These packages were field-tested in one supervisor training and with selected in-service and GCET instructors.

SUMMARY

In NWFP, PED efforts concerning teachers have focused on identifying policies that inhibit the effective and efficient operation of primary schooling, on increasing training opportunities for teachers with an emphasis on materials-specific training, and on improving supervisory support. Since 1990, construction of new GCETs for girls had brought preservice PTC training closer to the homes of girls, while a condensed PTC course and funding of AIOU candidates has helped eliminate the backlog of untrained teachers. Officers in almost every district have participated in the introduction, training, monitoring, and evaluation of new IMDC materials. They have worked with teacher guides detailing the steps to be taken in teaching each lesson in classrooms. Training units based on classrooms observation and the expert advice of model teachers have been prepared in the IMDC for use in preservice and in-service courses. Since 1991, also, a series of training workshops have been conducted to increase the awareness of learning coordinators about pedagogical concepts and methods that might be used to improve the quality of classroom instruction.

TEACHER-RELATED ACTIVITIES IN BALOCHISTAN

CASE STUDY

When program activities were first initiated in 1990, the two most significant teacher-related problems in Balochistan were the absence of qualified teachers (particularly females in far-flung villages) to staff schools and a poor quality training program that was unable to keep up with the backlog of untrained in-service teachers. Conditions in Balochistan make the provision of education services particularly difficult. Although Balochistan occupies almost half of the land mass of Pakistan, it comprises only 5 percent (approximately 5.5 million) of the population. The majority of the population (84 percent) is scattered in small settlements connected by poor roads. At the inception of the PED Program, it was estimated that the literacy rate in Balochistan was 10.3 percent, compared with 26 percent for Pakistan as a whole. In rural areas the literacy rate for females was less than 2 percent.

Planners estimated that during the course of the originally scheduled ten-year PED Program, the number of primary students in Balochistan would triple, thereby requiring an additional 10,500 teachers. The training capacity in the province at the time was grossly insufficient in terms of meeting this demand. Because of local traditions, many female teachers were denied access to training opportunities. Unless immediate actions were taken to ease the situation, the backlog of untrained teachers would increase, thereby causing further problems in the quality of primary instruction.

GATHERING BASIC INFORMATION

Human resource survey. At the start of the PED Program in 1990, a joint USAID-UNICEF human resource survey was undertaken. It was designed to provide information to the Education Department regarding building and staffing requirements for primary school expansion. Interviews were conducted in approximately 9,000 villages of the 20 districts of Balochistan. Information was collected from a knowledgeable local leader on conditions in the villages, the availability of educational opportunities, student enrollments, and degree holders. Community leaders were also asked to estimate parental demand for girls' education, the resources needed for initiating or expanding primary education, the availability of qualified female teaching staff, possible alternative teaching arrangements, ways to increase future pools of teaching candidates, and the impact of then-existing programs on improving the distribution of teachers.

The major finding of the survey, some of which contradicted prevailing beliefs about attitudes in rural areas, were that more than half of the rural villages in Balochistan favored having girls' schools in their communities. There were already more mixed (16 percent of the villages) than single-sex (4 percent) classrooms, and three times as many villages provided some type of primary schooling for boys as compared with girls. As expected, the lack of educated girls resulted in a

deficiency of female teachers. Indeed, almost no opportunities existed for middle or matric schooling for girls, even though 35 percent of the villages with girls in primary schools reported that parents would be willing to send their daughters to middle schools *if* they were located in the village or *if* the girls could be transported to them.

Survey findings also revealed that the majority of villages were willing to accept alternative provisions for the education of girls, such as male teachers in Kachi through third grade. (Only half as many accepted the idea of male teachers for fourth and fifth grade.) Almost the same ratios accepted the idea of coeducation at the primary level. Approximately 30 percent of villages requesting educational opportunities for girls had local females or males available who could serve as teachers. In short, the survey indicated that a substantial number of villages wanted education for girls and were willing to accept alternative arrangements in order to obtain it.

Multiclass study. Faculty members at the University of Balochistan also examined then-existing conditions in multiclass and Kachi classes as well as the dropout rate during the early primary years. Major findings of the multiclass study were that approximately one-third of the schools in the sample were only partial schools with fewer than five grades. Half of the schools consisted of one room, and most of the remaining were two-room schools. Many classes were held outside. The total enrollment of the schools tended to be small, with more than three-quarters having fewer than 80 students. In approximately 75 percent of the schools, there were unadmitted children, that is, attending children who were either underage or otherwise unable to pass admission requirements to the Kachi class. Facilities were poor. Water was available in only a quarter of the schools and toilets in a third. Absences, dropouts, and repetition were all inversely proportional to the increase in grade level. The students of a single school often came from a number of language backgrounds, which probably accounted for the fact that teachers commonly used Urdu rather than a mother tongue for daily instruction. More than half of the teachers were less than 20 years of age. More than 70 percent of the teachers were untrained and had never received in-service training. Existing textbooks contained lessons that the children were unable to master on their own and few self-exercises. The easiest approach to teaching under these conditions was to rely on memorization. Teachers, therefore, recommended an integrated text that would be easier to use under these circumstances.

Kachi study. The Kachi sample, which included both large urban and rural schools, probably provides a more accurate picture of the range of conditions in Balochistan. Study findings revealed that approximately one-third of the Kachi classes were unsheltered and more of these were found in urban areas where school enrollments were larger. In half of the classes, the space allotted to Kachi students was insufficient. In more than 70 percent of the classes, there were attending but unregistered children. Water and toilets were available in only half of the schools. In more than half of the classes, the teachers' language backgrounds were different from that of the students. Approximately one-half of the teachers were matric; the other half were intermediate graduates. Almost half of the teachers were untrained and had never received in-service training. Students spent most of their time either copying or reciting Urdu letters and numbers, while teachers devoted most of their time to supervising these activities. Student engagement rates were

significantly higher in sheltered, as opposed to unsheltered classes, and when teachers were directly involved with the children.

The Kachi repetition rate was 34 percent, slightly higher for females than males, and the dropout rate was 20 percent. The dropout rate for females was 27 percent while that for males was 13 percent. The dropout rate was twice as high in rural (30 percent) as in urban areas (14 percent), and it was slightly higher in single (20 percent) as opposed to multigrades (17 percent).

Kachi dropout study. A study was also conducted regarding the causes of the dropout rate at the Kachi level, as determined through 72 parent interviews in three districts: Quetta, Sibi, and Loralai. The high dropout rate was attributed primarily to problems experienced in the schools (39 percent), for example, education's lack of relevance, corporal punishment, and lack of shelter; problems experienced in the home (33 percent) and poverty (23 percent). The primary reason for dropout was the poverty of parents and the fact that there were too many children to educate (23 percent). The districts varied considerably from 64 percent (Quetta), to 17 percent (Sibi), to 28 percent (Loralai). Reasons cited were education's lack of relevance, poor facilities, severe weather for unsheltered children, and corporal punishment.

INCREASING FEMALE EDUCATION IN RURAL AREAS

To address the most pressing problems related to the lack of female education in rural Balochistan, the PED Program focused its early efforts on increasing the number of female teachers in rural areas and on building community support for girls' education.

Training local female teachers. The Mobile Female Teacher Training Unit (MFTTU-1) was established in 1990 by the Directorate of Primary Education (then the Education Department) in collaboration with UNICEF. The purpose of the unit was to prepare young women with minimum qualifications to teach primary school classes in their own communities. Using the data from the human resource survey, villages were located where female middle school students were reported to exist. These women assembled in centers where trained secondary school teachers and administrators conducted an intensive course prepared specifically for these candidates. The materials for the two-month course was developed by teacher trainers from within the Education Department, who condensed the regular nine-month Primary Teaching Certificate (PTC) course into its essential elements and provided a detailed schedule of when to introduce each element. This course, and the accelerated course that followed, attempted to introduce the PTC curriculum in a more concrete and practical way for teachers in the field.

The first cycle of training began in Khanozai and Panjgur in December 1990 with 41 trainees. A second cycle was conducted in Sibi and Dera Allah Yar beginning in April 1991. A total of 120 women were trained through this course. Initially, a number of problems were encountered in implementing this activity. These obstacles concerned methods of selecting candidates, a weak curriculum, lack of follow-up supervision in the field, and difficulties in placing graduates.

To resolve these problems, the improved program (MFTTU-2) coordinated its activities with the Community Support Program (CSP) in order to identify female candidates for training. The program was extended to three months in order to use the materials developed for the "crash" program — the condensed PTC course developed for untrained in-service teachers. As a result, the MFTTU staff also work in closer coordination with the departments that sanction and appoint teachers, so that now 120 teaching posts are reserved annually for MFTTU graduates. Graduates can receive a PTAC if they have already, or will have, completed the matric degree within two years of completing MFTTU training. Hence, they will move up the career ladder with relevant increments in salary and status, just as other certified teachers do.

Establishing community schools. In the past, many of the problems encountered in opening girls' schools resulted from a lack of community support. Conflicts arose regarding whether or not girls should be allowed to go to school and what locations were appropriate for them. Shortly after these schools opened they were closed as a consequence of not having resolved these problems. To resolve this issue, the Directorate of Primary Education established the Community Support Program (CSP) in 1992.

The purpose of the CSP was to determine village commitment to girls' education before the education departments invested major resources in the locality. A CPS promoter team — one male and one female — would visit those villages that had expressed an interest in primary education for girls. The team interviewed parents and community leaders and, if they were convinced of the interest in girls' education and were guaranteed that at least 20 girls would attend school, would start a 13-step process, which consisted of the following:

1. Identify a female with a middle (grade 8) or matric (grade 10) pass.
2. Verify her residence in the village.
3. Verify her academic credentials.
4. Test for mathematics, Urdu, and reading/writing skills.
5. Assess each household in the village to determine the number of households and the number of girls of primary-school age.
6. Form a Village Education Committee.
7. Start a school on three months' probation.
8. Request formal sanctioning of the school and appointment of the teacher.
9. Sign a contract.
10. Formally transfer ownership of the land for the school to the Education Department.
11. Recommend that the teacher be trained through the MFTTU training effort. Reevaluate the situation.
12. Prepare the temporary school facility. Appoint the teacher.
13. Monitor the school.

The MFTTU trainer monitored the training to ensure that the needs of the local teachers were being met. In most cases, the training focused on practical strategies for multiclass instruction.

Following the training, the field trainer supervised the teacher in her class and planned in-service workshops as the need arose.

TRAINING THE BACKLOG OF PRIMARY TEACHERS

To address problems related to the quality of instruction, PED concentrated initially on training the backlog of in-service teachers. When primary schools were first opened in Balochistan, no teacher training was available. Persons who could read and write were employed with the understanding that they would receive training at a later date. This practice of training after employment was called "on-service" training to differentiate it from short, intermittent "in-service" training that did not lead to a teaching certificate.

By the time the PED Program was established, there were 11 GCETs operating in Balochistan, and only 1 of them (in Pishin) was designated for women. Eventually, the GCETs developed the capacity to train a number of primary teachers equivalent to the total employed annually but were unable to eliminate the backlog of untrained teachers that needed to be trained in order to clear the GCETs for a new preservice program. The issue was mainly one of equity, because untrained teachers remained fixed at a low pay scale and could not advance until they took the nine-month course and obtained their Primary Teaching Certificate.

Accelerated Primary Training Program. To overcome this problem, an accelerated Primary Training Program was designed and implemented in 1992. The course consisted of a three-month intensive workshop based on the curriculum of the regular GCET nine-month PTC course. The special features of the course were that it was field-based, emphasized new materials developed for multigrade teaching, stressed teaching aids, and used trained instructors. Course materials were published in a 512-page manual. Trainers were also provided with hourly time schedules indicating when topics should be taught. Although the accelerated course was completed in three months (rather than in nine months), planners estimated that by requiring regular attendance and eliminating the days lost for holidays, strikes, and exams, that the number of contact hours between student and teacher would be comparable in the two programs.

Trainers for the accelerated program were trained using the "cascade" method. The Technical Assistance team, together with two senior subject specialists, conducted a three-week workshop in the Bureau of Curriculum and Extension (BCE) to train master trainers — senior subject specialists and subject specialists — in the use of program materials. The master trainers, in turn, trained secondary teachers and headteachers, who then trained primary teachers at accelerated program sites. The courses were supervised by senior subject specialists, directors, and deputy and assistant directors from the BCE and PED.

Trainers administered mid-term exams at their sites, and the BCE conducted final exams at the end of the course. Those passing the final exam and meeting the attendance requirement were awarded the Primary Teaching Alternative Certificate (PTAC). This certificate gives teachers all

the rights and privileges toward salary and promotion in Balochistan but not in the other three provinces. The accelerated program was held over a two-year period at approximately 50 sites during holidays in winter and summer zones. A total of 2,000 teachers were trained during each of the holidays. By mid-March 1994, all untrained teachers had received training.

IMPROVING TEACHER TRAINING

To improve teacher training, PED had plans to develop a new training course for preservice teachers and a better supervisory support system for teachers in the field. It was widely recognized during the planning of PED that teacher training in Balochistan was of poor quality. BRIDGES studies had determined that students of trained teachers did not score significantly higher on achievement tests than students of untrained teachers. The Minister of Education, therefore, suggested a full assessment of the existing program to determine its strengths and weaknesses. Unfortunately, attention was diverted to other priorities, and this study was not undertaken. One of the major problems was the high cost of teacher training, which not only included actual training costs but also the costs of teachers' salaries, which continued through the nine-month course, and the costs of replacing teachers with substitutes while they were absent.

Problems related to the qualitative aspect of the training course were as follows:

- ◆ Teacher training was too theoretical and it allowed little application of abstract principles that were taught.
- ◆ Instructors were not trained as trainers and often had no experience in primary classrooms.
- ◆ Little emphasis was placed on primary subject content knowledge where teachers were weak.
- ◆ The teaching model, even in the training colleges, relied chiefly on memorization. Students failed to take the course seriously and were often absent.
- ◆ Countrywide final examinations required instructors to teach outmoded requirements rather than allowing them to develop more relevant instruction.

As a result, the Education Secretariat in 1994 issued an order that in the future it would be mandatory for all teachers to be certified before being posted to classroom service. Consequently, even before the end of the accelerated course, a new program of preservice training was being designed to replace the old, "nonservice" program. Meetings were held to study the needs of teachers and students and to prepare the preservice curriculum. It was agreed that the training should be more practical and more oriented toward producing desired learning results.

The new Faculty of Education Program will combine three programs — the Primary Teaching Certificate (PTC), the Certificate of Teaching (CT), and the Faculty of Arts in education (FA). These programs were taught previously in the GCETs as one-year programs and were taken by students in the order PTC, CT, and FA for a total of three years. With few exceptions, the PTC and CT courses were the same; therefore, the new course will be completed in two years rather than in three. Specifically, the new program will consist of two years with the option of stopping after the first year and receiving the PTC. Students will be encouraged to complete the full two-year program, even though the one option will accommodate those who can afford only one year of study. Graduates of the full two-year program are expected to be better primary teachers than those who take only one year.

The curriculum for the first year will consist of 70 percent pedagogy and 30 percent subject content matter. The second year will reverse the ratios, with 30 percent pedagogy and 70 percent subject content matter. Methods of teaching will be included in all content courses, with an emphasis on multigrade strategies of instruction. Some of these more practical ways of presenting the curricula have been tried successfully in the mobile and accelerated curricula. The lecture-memorization method, which predominated in all classrooms, including those in the teacher training institutions, will be replaced with demonstrations of teaching practices by the trainers themselves, with the use of videos, or through observations in actual classroom settings. Each course will require supervised practice of what has been learned in class. These supervised practicums might, for example, include peer teaching or micro teaching in lab schools and later (after the student teacher gains confidence) in classrooms under supervision. It is expected that teacher trainees will learn the subject content during their first year, along with teaching methods.

The curricula in Urdu for reading and math is being revised and tested in two GCET's (Mastung and Quetta). A consultant is working on site in the colleges with instructors and subject specialists from the Bureau of Curriculum and Extension. The curricula will focus on multigrade instruction in the two subjects. The Kachi and first grade Urdu and math materials from the textbook and learning materials project will be incorporated in the revised curricula. The traditional texts will be included until they are replaced by the new texts as they are developed and published. It is proposed that additional consultants be brought into the project to revise the other content and methodology areas of the curricula.

During the course of PED, 13 candidates were enrolled in degree programs in the United States, and 120 education officials took short-term courses or went on study tours. In addition to receiving USAID-sponsored training, the 13 returnees received their first significant preference for employment in PED offices. Five remain working for PED in senior positions in Balochistan, and two are now with the Society (NGO), both holding two senior positions of Field Director and Managing Director.

IMPROVING TEACHER SUPERVISION AND SUPPORT

BIMDTC personnel train all supervisors and teachers to use new instructional materials in the classroom. As materials are pilot-tested, teacher training begins. Teachers were first trained in ten schools in Loralai to use new preliteracy materials in Urdu, which were developed with PED assistance. The same materials were made available to teachers in the Accelerated Teacher Training Program and in Sibi (where other training in the use of materials for a federal program was taking place). Once the materials were tested and revised, 8,000 sets were produced through BIMDTC desktop publishing and distributed to schools throughout the province where teachers received training, again through the Accelerated Teacher Training Program.

During the pilot-testing of Kachi and first-grade materials, which continues throughout 1994, the type and duration of teacher training required to use new materials effectively in the classroom will be tested. Teachers from 30 of the pilot schools will be given in-service training for half of the maximum number of days allowed by the government, usually ten days. Teachers from the remaining 30 schools will be given only a one-day orientation. Achievement test results and information from teacher questionnaires will be analyzed to determine the relative effectiveness of the two types of training and to plan a program for future teacher training.

As a result of the introduction of new materials into the classroom, the role of field supervisors has been redefined from that of inspection to that of supervision. The special feedback instruments designed to gather information from field use in revising textbooks and teachers' guides meet the needs of supervisors as well as those of teachers and students. The new teachers' guides serve as a supervisory framework for school visits.

SUMMARY

In Balochistan, the main PED efforts concerning teachers have focused on developing programs to address the serious problem of finding female teachers for rural areas. Since 1990, a Mobile Female Teacher Training Unit Program has brought training closer to potential female candidates, supporting them in opening schools for girls in areas where girls' schools have not previously existed. This effort is now coordinated with the Community Support Program, which provides a link between education departments and communities in rural areas to ensure the efficient and effective use of local and provincial resources for girls' education.

To improve instruction, PED efforts in Balochistan have been directed first at eliminating the backlog of untrained teachers through an accelerated training effort that managed to graduate almost 8,000 teachers. The training colleges are now being converted to preservice institutions

where teachers will be trained before they enter service rather than as under the previous system where they were trained after serving a number of years in classrooms.

ACCOMPLISHMENTS

During the four years of its existence in Balochistan and NWFP, the PED Program has made progress in addressing education problems that relate to teachers. The major accomplishments can be summarized under the informal objectives that were set in the original working papers for PED:

1. To increase the supply of teachers sufficiently to staff the expected expansion in the primary system:

- ◆ Six new GCETs have been constructed, with an increased annual output of 1,200 teachers.
- ◆ A total of 410 girls' primary schools have been upgraded to middle schools to increase the number of female teacher candidates in rural areas.

2. To attract more teachers to service in rural areas:

- ◆ New GCETs have been built closer to the homes of prospective female teachers, in areas where female teachers are needed.
- ◆ Policy changes have been made to encourage girls to go to boys' schools and for male teachers to teach in girls' schools where communities accept the idea and there is no female teacher.
- ◆ Other policy changes have been recommended to provide incentives for rural service, to recruit and appoint teachers at the *tehsil* level, and to equalize urban and rural allowances.

3. To attract and keep more qualified teaching staff:

- ◆ The backlog of untrained teachers has been largely eliminated by offering alternative distance and condensed training courses.
- ◆ Policy changes have been recommended to provide rewards for teachers with high-achieving students.

The experience in trying to improve teacher training gained over the four years of the program's life lead us to make the following recommendations:

1. To make training qualitatively better and more relevant:

- ◆ The preservice PTC course needs to be thoroughly overhauled. It will be important that this new course be practical and relevant to classroom realities and maintain enough of the crucial aspects of previous teacher-student relations so teachers will not reject the course out of hand. The core of the program needs to revolve around training in subject content knowledge, materials-specific training, practical methods, and concrete classroom management tips.
- ◆ More training units constituting lessons and demonstration materials need to be developed for the GCETs in subject-content, materials-specific training, practical methods, and concrete classroom management topics. These should serve as the core of an improved PTC course and should be used immediately while a full-fledged PTC course is being developed. (Some of these units have already been developed in NWFP, and some parts of the revised accelerated curriculum in Balochistan could be adapted to these purposes).
- ◆ Preservice and in-service programs should be connected more closely, either by locating both in GCETs or by using GCET instructors for both types of training. The idea is to develop a more productive communication among practitioners, trainers, and program developers. In addition, if in-service training is located in GCETs, the courses will be able to take advantage of trained instructors and greater resources which will eventually equip these institutions. Field supervisors need to be involved in this closer liaison.
- ◆ Training is needed for GCET instructors and field supervisors in what and how to teach teachers. Both need to be involved in the evaluation of training programs in order to understand their impact in classrooms.
- ◆ Preservice PTC candidates need to be tested on their knowledge of primary-level subject contents at the start and at the end of each academic year; they should not be awarded a PTC if they do not meet a determined standard of proficiency in subject content knowledge. NWFP has started this process and it needs to continue.

2. To ensure that the qualitative improvements in instruction reach the classroom:

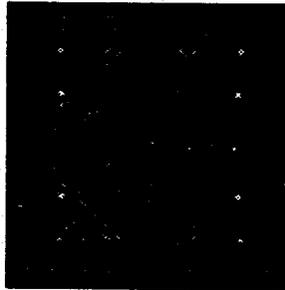
- ◆ An in-service program is needed for what is now a backlog of "undertrained" as opposed to "untrained" teachers. Extensive in-service programs are needed to improve the skills of classroom teachers, whether they are graduates of PTC,

MFTTU, or the accelerated course. NWFP studies show that in-service teachers have many of the same weaknesses as PTC students. They also need to learn subject content knowledge, how to teach the student texts effectively, and how to organize classes for more efficient learning. They will also need to be trained in new materials and programs as they come on line. These objectives will be facilitated if training materials for preservice courses are produced in units that can be adapted for shorter one- or two-topic in-service courses.

- ◆ Annotated student texts designed for teachers bridge the gap between theory and practice and show teachers exactly what they are supposed to teach. These daily lesson plans are essential to move teachers away from the only instructional approach they have known up to now, lecture-memorization.
- ◆ A system of accountability for quality learning needs to be organized from the teacher up to the highest authority in the provincial government. At each level, there needs to be consequences of performance, good and bad. NWFP has created such an accountability up to the level of SDEO, but the system is unlikely to continue without the necessary leadership.
- ◆ Many more evaluations of the effects of innovations in the system needs to be conducted in schools and classrooms where the effects are intended to be felt. It is unclear, for example, whether the "condensed" courses have had any effect on student learning and whether hands-on PTC training, such as the creation of visual aids, is ever used in classrooms. (Much practical training may turn out to be just another form of "theory" if it is not evaluated properly).
- ◆ In-service training should be connected to field supervision in a productive way. Candidates for the training and their skill levels need to be determined by supervisors from observations in the field. These supervisors then also need to be involved in the training to know what teachers have learned so they can follow up in the class room.
- ◆ More instructional materials and other support aids adapted to real conditions and needs should continue to be developed to assist the teacher in her work.
- ◆ Small observational studies should be conducted in classrooms to determine exactly what types of training are needed by teachers and how these needs change as new programs and training are brought on line. Incalculable resources have been wasted by forgetting this essential step. It is not enough to rely either on experiences in other countries or on theoretical assumptions of what is needed.

Chapter 8

Construction Management



8. Construction Management

This final chapter describes the issues relevant to the management of school construction in both NWFP and Balochistan. The bulk of development funds are used for constructing school buildings, despite the fact that construction is not critical to increasing enrollment. Schools have the option of operating in donated or rented buildings, even under trees, as long as a teacher is available and there are school-age children in the vicinity. Still, construction has continued to receive an inordinate share of attention and development funds at the expense of more important issues related to access, equity, and quality.

For these and other reasons, USAID placed responsibility for the oversight and technical assistance for all construction with the USAID Office of Engineering (USAID/O/ENG). As Contractor, AED's role vis-à-vis construction was to:

- ◆ Prepare school location plans in collaboration with provincial authorities.
- ◆ Assist the provincial governments in preparing the physical requirements of new and existing schools (such as water supply, latrine, physical layout, and student flow).
- ◆ Include a section in status reports that tracks the construction program based on information provided by the USAID Office of Engineering.
- ◆ Arrange and implement short-term contracting and management training in country for both provincial authorities, with the guidance and assistance of USAID/O/ENG).

AED's role was later modified, as follows:

- (1) This program will include construction activities which consist of refurbishing, rehabilitating, and/or upgrading existing schools as well as building new facilities.

Primarily, the Contractor, in matters related to construction, shall:

- (a) Provide technical assistance and coordinate construction programs with the supply of teachers, books, and related instructional materials.
- (b) Ensure siting of new schools to be established in accordance with the program objectives of increasing access to primary education and making it more equitable.

- (c) Arrange and implement short-term, in-country training pertaining to construction management and field inspection for both provincial authorities with the guidance and assistance of USAID/O/ENG.

The modification also delineated what AED would *not* be responsible for:

- (1) Advice to provincial staff on:
 - Planning and managing construction
 - Procuring architect/engineering (A/E) and construction services
 - Monitoring/supervising A/E and construction contractors
 - Preparing cost estimates
 - Reviewing submittals of A/E and construction contractors
 - Evaluating construction site
 - Monitoring construction/design quality and progress.
- (2) Assistance to the Mission and provincial staff in achieving annually negotiated benchmarks for construction.

Prior to the establishment of PED, construction activity was hampered by a limited capacity both in administration and engineering. For example, the former World Bank Project in Balochistan had an ambitious construction program that did not move forward for almost eight years. The Directorate of Civil Works (DCW) was then stimulated by the new PED activity, and some work began. In early 1991, the World Bank insisted that it be combined with PED and merged into the office of the Additional Director. The government then not only completed the construction but also was authorized an additional 500 classrooms under PEP II. The increase in construction in fiscal 1990-91 largely resulted from PED support to PEP II.

The overall quality of school construction was generally substandard. Delays were the rule rather than the exception. A school building could normally be expected to be completed in approximately six months. Frequently, however, it took twice as long. Further, once school buildings were constructed, there was virtually no maintenance performed. As a rule, the Communications and Works Department in NWFP does not allocate funds for maintenance during the first three years following construction. Consequently, a large portion of the funds budgeted for primary education construction was wasted.

All planning, design, monitoring, and maintenance activities were performed by the Communications and Works Department (C&W) in NWFP and by the Directorate of Civil Works (DCW) of the Education Department in Balochistan. Construction was carried out by small private-sector construction firms, which contracted to build one- or two-room schools. C&W maintains a roster of prequalified firms in each district. These firms, however, generally are inadequately equipped and staffed. Though funds were allocated for school maintenance, no system was in place for adequately maintaining the building.

With the exception of large, single construction projects, the C&W designs the projects. Planning consisted merely of adding a certain percentage to last year's construction program. No attempt was made to develop plans for undertaking the construction as per the demand and allocation and use of resources. C&W maintains a list of construction firms categorized into A, B, C, etc., classes (based on the amount of work a firm could handle in terms of construction estimates). It advertises and awards tenders (request for bids), monitors, measures, certifies, and pays for the construction and, at a later date, maintains the buildings. Problems exist at each level.

Regarding design, the Communications and Works Department used standard drawings. These drawings, in the case of primary schools generally consisted of one sheet with line plans but lacked the necessary details concerning architecture, structure, and utilities. The method for rating a construction firm, reviewing bid evaluations, awarding work, and monitoring construction activities is inefficient and, at times, corrupt. The number of schools being constructed each year are inadequate, the quality of work is below standard, and maintenance is nonexistent, despite the fact that the buildings require major repairs soon after completion.

In the past, attempts were made to study the management of primary education construction, but these investigations did not result in any practical changes in either C&W's performance or its organization. Construction funds are directly assigned to C&W in the provincial annual development programs (ADP). Apart from minimal coordination during site selection and at the time of completion, the Education Department has little influence regarding progress and quality of construction. USAID's approach, in keeping with the overall program, called for improved management and use of the private sector and a greater say for the Education Department — the end-user or the "client" — in matters of performance and quality of construction.

Balochistan already had a Directorate of Civil Works within the Education Department, which increased the department's control over construction. DCW, however, is organized along the same lines as C&W and follows the same practices. Therefore, other management issues, including planning, progress, and quality control remained the same.

NORTHWEST FRONTIER PROVINCE

Encouraged by PED's support, the provincial Education Department also raised the issue of construction management. Over the years, public construction has become involved in various controversies; therefore, there has been substantial resistance to any changes in the status quo. Following lengthy debates, the province decided to engage a private-sector engineering firm to study the problem and recommend alternative ways to solve it.

A firm was hired through the regular government and completed its study in six months. The firm recommended that the province create a Directorate of Civil Works (DCW) within the primary Education Department to oversee management of all school construction in the province. The DCW should have at the most five engineers (as opposed to hundreds of engineers employed by

engineering cells of other provincial education departments) supported by 37 administrative staff. It also recommended hiring private-sector firms to plan, monitor, supervise, and maintain school construction. The firm was subsequently called upon to work out the details of DCW, such as, jurisdiction, staff and operational budgets, Rules of Business, amendment in the Education Department's rules of business, and procedures for gradual transfer of works from C&W to DCW.

These recommendations resulted in a number of lengthy, heated discussions within the government. Finally, the province opted to engage a Construction Advisory Unit (CAU) on an experimental basis for three years. Although the CAU was unique to NWFP, it was to function in the same manner as DCW, except that its jurisdiction was to be limited to three divisions and the total staff reduced to 16, of which two are engineers.

CURRENT ACTIVITIES OF CAU

1. CAU is supervising one private firm that is surveying all existing schools in order to prepare a school maintenance program.
2. CAU also invited and received technical proposals from private-sector firms for construction management. Financial proposals of the three top-ranked firms are with the Planning and Development Office staff who will make the final selection.
3. A summary is submitted to the Chief Minister for approval to amend the Education Department's Rules of Business, thereby allowing it to undertake construction through CAU and not depend solely on C&W.
4. A German Technical Adviser, funded by GTZ (the German development agency), is expected to be on board by September 1994.

Under the auspices of the Social Action Program (SAP) and the expected follow-on primary education program of the World Bank, the donors are insisting that the CAU be made fully operational. It is possible that because of the painfully slow progress, the donors might decide to abandon CAU's cause and rely solely on C&W. Such a decision would be unfortunate, because with continued donor support, CAU can easily become fully operational within a year.

PLANNED TARGETS

Operation of the Construction Advisory Unit in the Directorate of Primary Education was just one of the tasks defined for the construction component. The primary target for NWFP involved expanding education facilities and locating them to more effectively increase enrollment. Other major activities, as set forth in the Sixth Annual Work Plan for NWFP for fiscal 1994-95, included:

- ◆ Completing the Physical Conditions Survey of primary schools and related facilities and entering the data on subdistrict facilities' maps prepared by the contractor, along with school mapping data and a five-year repair and rehabilitation schedule.
- ◆ Establishing construction targets. By June of 1995, a total of 3,073 primary schools will be established, of which 2,537 will be operating in rented buildings and 342 will not have a gender designation. The schools will be constructed in locations where there is assurance by the responsible District Education Officer that there are at least 80 girls or boys, aged five through nine, who have no access to schools and where the location meets other site criteria.
- ◆ Adding 2,571 classrooms to existing schools to allow for increased enrollment and to ease overcrowding.
- ◆ Establishing and operating 120 community schools.
- ◆ Continuing work on two GCETs in Nowshera and Chavsadda and selecting sites for additional colleges.
- ◆ Constructing a facility for the Directorate of Primary Education in Hayatabad.
- ◆ Establishing a Teacher Resource Center in Hayatabad.

BALUCHISTAN PROVINCE

Although construction management was slow to develop, in Baluchistan, the introduction of a private architect/engineering firm and on-site technical assistance accelerated the pace of reform. In December 1991, in response to encouragement from USAID, the Government of Baluchistan retained a private architect/engineering firm to assist the government in planning and implementing the school construction program and in monitoring construction activities. The underlying justification was that the private sector would be more accountable for performance and less affected by the pressure of influential persons and others who viewed school construction as an opportunity for personal gain. In addition, personnel could be increased or decreased based upon the needs of the construction program, thereby dispensing with the practice of maintaining a large work force on government payroll during slack periods.

Initially, government engineers resisted the idea of hiring a private architect and engineering firm. Historically, these engineers had almost exclusive control over this high-cost program. The first survey of the A/E firm identified major flaws in some construction that had been rushed to precede the arrival of the firm. Survey findings also noted that concrete had been poured during freezing weather. To the credit of the government, the construction was torn down and those responsible were required to meet their contractual obligations. Although there is still much

resistance from the insiders to involving a private A/E firm, the Secretary and Minister of Education are supporting the practice. The current contract expires in December 1994. As a result of the problems mentioned above and a subsequent expanded workload, the government expects to have two firms under contract to continue the work through October 1994.

In 1992, USAID determined that the program might benefit from placing an adviser on site in each of the provinces, thereby shifting some of the locus of USAID's contribution from the Islamabad USAID office to the provinces of Peshawar and Balochistan. This adviser was easily integrated into the TA team in Balochistan and worked in close collaboration with the Technical Adviser, Administration and Management as well as the other members of the TA team. This on-site presence allowed issues and concerns to be addressed and monitored on a continuing basis. It also encouraged the engineering function to consider instructional and concerns in school design. The adviser was also available to assist the primary education officers in the Education Department with day-to-day implementation of program activities.

The design of the multigrade schools in Balochistan is one example of the successful interaction between the construction adviser and the technical team already on site. The size of the multigrade classroom was in question and was the topic of considerable debate among advisers, donors, and government officials. Through a combined effort, these players planned and conducted an experiment. With the cooperation of local school officials, the parameters of a multigrade classroom were marked according to original specifications. A teacher and a group of students equaling the average class configuration was asked to sit and move around within the marked room. Because the design was found to be too confining, the dimensions were modified and approved and are now accepted as the standard.

The contribution and perceived value of this technical support in the province is measured by the fact that the follow-on TA contract for the PED Program, which is paid by the Government of Balochistan, includes the position of TA for Engineering for the duration of the program.

PLANNED TARGETS

The program strategy focused on the following activities:

- ◆ Introducing a private-sector architect/engineering firm for planning, designing, and supervising construction
- ◆ Developing improved criteria for site selection design and construction of new schools
- ◆ Constructing GCETs
- ◆ Building warehouses for textbooks
- ◆ Constructing new primary schools
- ◆ Building additional classrooms
- ◆ Establishing middle schools
- ◆ Training provincial engineers
- ◆ Constructing a facility for Primary Education Directorate - Quetta.

TARGETS ACHIEVED

- ◆ **Selection of a private-sector architect/engineering firm.**
- ◆ **Development of criteria for the selecting, designing, and constructing new schools:** With the assistance of the A/E firm, the criteria were developed. All new sites are surveyed in preparation for the technical evaluation checklist of construction sites.
- ◆ **Design of a multigrade school:** To accommodate the curriculum design and the teaching style, a prototype classroom-multigrade school was designed. A number of multigrade schools have already been constructed and are functioning in various districts of Balochistan.
- ◆ **Construction of a GCET for women:** The GCET for women at Jinnah Town, Quetta, which included a hostel building for 50 female students, was completed and is operational.

- ◆ **Construction of a warehouse for textbooks:** The construction of the textbook warehouse for the Balochistan Textbook Board has been completed and is functioning at its location on Sariab Road, Quetta.
- ◆ **Construction of schools under the USAID program:** A total of 130 new primary schools and 407 additional classrooms were constructed under the USAID program. Moreover, 80 primary school buildings were upgraded to the middle-school level.
- ◆ **Training of provincial engineers:** Petroman, under the PED contract with AED, has trained the divisional engineers and subdivisional officers of the DCW in construction management. The subdivisional officers and subdivisional engineers of the DCW were trained in field inspection, supervision, and project monitoring. All of the subdivisional officers and subdivisional engineers were provided with manuals containing the necessary information for conducting field inspections. The DEOs and SDEOs were also provided necessary consumer training regarding primary education facilities. They were given the consumer's field inspection books.
- ◆ **Construction of a facility for the Directorate of Primary Education:** A private-sector architect/engineering services firm (A/E) was engaged by the Director of Primary Education for planning, designing, and supervising construction activities. The preliminary and final designs have been completed. Following this step, a short list of qualified construction firms was developed. A tender was then sent out to these firms inviting them to bid. After selection, construction will begin in October of 1994.

During the past three years, there have been substantial improvements in the architectural drawings, documents, reporting of status, and so forth. There also is greater accountability and responsiveness to the client's concerns regarding quality control. Further, the province's capacity to build schools is estimated to have doubled as a result of the participation of the private A/E firm. It also was instrumental in introducing "packaged" construction contracts, which are expected to result in improved quality as well as local capacity. The firm also has developed a design for multigrade schools.

Theoretically, once a site is proposed or selected for construction of a school building, a government engineer visits the location to determine its suitability for construction and accord "technical sanction" to the construction project. In practice, however, no established criteria existed for evaluating a site. Under PED, the private-sector firm has developed a checklist for evaluating a construction site. Most government engineers, after graduating from the school, do not receive any additional training designed to improve their skills in management, field inspection, and so forth. PED, therefore, arranged for such training for Balochistan engineers in the Department of Civil Works.

NORTHWEST FRONTIER PROVINCE

PROBLEMS

The structural changes being sought in the province's management of construction were determined to be radical by local standards. From the start, it was expected that considerable time would be required to resolve the issues at hand. For a ten-year effort, which PED initially was, the objectives were fairly realistic. For a four-year program, however, the objectives seemed ambitious. High-level meetings were required at all important stages for approvals. Arranging these meetings, however, was a daunting task in NWFP for USAID. Most senior bureaucrats move from one meeting to another and frequently are not well-briefed regarding developments. Further, frequent changes occur in the bureaucracy at senior levels. All of these factors made it extremely cumbersome for a change as important as the ones proposed for construction management to be approved.

LESSONS LEARNED

1. A principal issue such as construction management needs to be included in "conditions precedent."
2. Implementation activities need be planned so that a delay in one activity will cause minimum disruption to other activities.

BALUCHISTAN PROVINCE

PROBLEMS

The role of the private-sector firm remains unclear, especially in relation to the DCW. The firm is effectively planning, managing, assisting in procurement, supervising, and monitoring construction. DCW is supervising the firm on behalf of the Government of Baluchistan. Many believe, however, that the firm is doing the same job as the DCW and, therefore, that duplication exists. Yet, there are others who believe that the firm should be a "watchdog" over DCW's staff. This conflict has not yet been resolved.

LESSONS LEARNED

For meaningful technological transfer, there should be a certain distance between the government implementation official and those providing technical assistance, in this case a USAID Resident Engineer in each province. This approach would allow the government officials to develop and increase their own capacity for policy-making and implementation.

WHAT IS NEEDED

Training of DEOs and SDEOs. District-level and lower education officials are the end-users of primary education facilities. A need exists, therefore, to inform them regarding the construction and maintenance process so that they can assist engineers and contribute toward the planning, monitoring, and maintenance process.

Increase in Community Participation. Increasing pressure exists to involve the local communities in the development process. Construction is no exception. It will be important, however, to study this aspect and develop models for participation of communities in the construction and maintenance process.

Assessment of the DCW. It is necessary to review the organizational structure of the Directorate of Civil Works and make appropriate recommendations regarding staffing, transportation, equipment, and training.

Scheduling and Monitoring. A need exists for a computerized system to monitor the progress and quality of construction. There also is a need to develop an implementation plan and schedule for repair and rehabilitation of schools in all of the districts and subdistricts of Balochistan.

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