

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET	1. TRANSACTION CODE <div style="border: 1px solid black; display: inline-block; padding: 2px;">A</div> A ADD C CHANGE D DELETE	PP 2. DOCUMENT CODE 3
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3. COUNTRY/ENTITY BOLIVIA	4. DOCUMENT REVISION NUMBER <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
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8. ESTIMATED FY OF PROJECT COMPLETION FY <div style="border: 1px solid black; padding: 2px;">85</div>	9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <div style="border: 1px solid black; padding: 2px;">80</div> B. QUARTER <div style="border: 1px solid black; padding: 2px;">4</div> C. FINAL FY <div style="border: 1px solid black; padding: 2px;">84</div> (Enter 1, 2, 3, or 4)
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10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	(509)	(-)	(509)	(.500)	(-)	(1,500)
(LOAN)	(-)	(-)	(-)	(606.8)	(5,093.2)	(5,700)
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY	-	-	-	-	2,700.	2,700
OTHER DONOR(S)						
TOTALS	509	-	509	2,106.8	7,093.2	9,200

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>80</u>		H. 2ND FY <u>81</u>		K. 3RD FY <u>82</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) EH	622	636	636	509	-	463	5,700	300	-
(2)									
(3)									
(4)									
TOTALS				509	-	463	5,700	300	-

A. APPROPRIATION	N. 4TH FY <u>83</u>		O. 5TH FY <u>84</u>		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULE
	Q. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1) EH	238	-			1,500	5,700	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> MM YY 06 83 </div>
(2)							
(3)							
(4)							
TOTALS	238	-			1,500	5,700	

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PIO FACESHEET.

1 = NO
 2 = YES

14. ORIGINATING OFFICE CLEARANCE	15. DATE DOCUMENT RECEIVED IN AID/W. OR FOR AID/W DOCUMENTS. DATE OF DISTRIBUTION
SIGNATURE <i>Malcolm Banta</i>	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> MM DD YY 06 19 80 </div>
TITLE Acting Mission Director USAID/Bolivia	
DATE SIGNED	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> MM DD YY 06 19 80 </div>

BILINGUAL EDUCATION PROJECT

(511-0520)

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* On file in LAC/DR

I. SUMMARY AND RECOMMENDATIONS

A. Facesheet

B. Recommendations

Based on the findings during intensive review of the Bilingual Education Project, it is the opinion of the Project Committee that the following be submitted for AID approval:

- Development Grant	\$ 1,500,000
- Development Loan	\$ 5,700,000

The total new obligation is \$ 7,200,000

C. Summary Description of the Project

The borrower/grantee will be the Government of Bolivia (GOB). The executing agency will be the Ministry of Education and Culture (MEC).

The goal of the project is to assist the Ministry of Education to establish a more efficient and equitable public education system institutionally and substantively responsive to the needs of rural Bolivia. The purpose of the project is to improve educational opportunities for Quechua-speaking primary school children by introducing the use of the home language in the first three grades of instruction. To prepare for the first three grades, the project also will introduce some Quechua and oral Spanish usage at the pre-school level. In the fourth and fifth grades a Quechua maintenance program will be included in the curriculum while the majority of instruction will be in Spanish.

Two new institutions will be established within the Ministry of Education which will be responsible for the implementation of bilingual education activities. At the national level, the Department of Bilingual Education will have overall responsibility for policy matters and for curriculum and development of materials to be used nationally. At the departmental level, Centers for Bilingual Education will be responsible for working with participating schools, providing training for teachers, for the development of regional materials and production and distribution of bilingual education materials. These institutions will become permanent entities in the Ministry of Education, thereby assuring the integration of bilingual education into Ministry activities and establishing the basis for expansion.

The project will expand upon the pilot bilingual education program which is being implemented in Cochabamba as a component of

the Mission's Rural Education I project. Many of the materials developed as part of the pilot program will be integrated into the proposed project although new materials also will be developed. This new project, however, will employ a "full" bilingual education model which varies slightly from the "transitional" model of the pilot program.

The variation between the two models does not involve basic theory, or materials but rather what can be termed "curriculum application". The foundation of the full bilingual education model is recent research results which demonstrate that the development of second language competence and eventual academic attainment is a function of the level of the child's first language competence when intensive exposure to the second language begins. The curriculum for the model, therefore, is designed to develop a strong home language competency prior to teaching second language skills. On the other hand, the transitional model employed in Cochabamba was developed before these research results were available, and the curriculum that was designed does not place as much emphasis on home language preparation prior to teaching second language skills. With these new research results now available, the Mission believes it is appropriate to implement the proposed project and provide the basis for moving to the full bilingual education model. Section III.B.2 contains a detailed discussion on the choice of this model.

Project activities will be located in the departments of Cochabamba and Chuquisaca which have the highest concentration of Quechua speakers in Bolivia. A total of 65 nucleo schools will be included in project activities. The project is expected to benefit approximately 86,000 students, teachers and technicians directly and an additional approximately 337,000 persons indirectly.

The major focus of the project will be on teaching Quechua children to read and write in their home language while simultaneously providing intensive instruction in Spanish as a second language. A secondary focus will involve research on variations of Quechua, patterns of language use, and analysis of Spanish and Quechua spoken by children. In support of the former, the project includes components in training, curriculum development, and materials development and production. A research and evaluation component supports both.

Project loan funds (\$5.7 million) will finance training costs, basic school equipment, office equipment for the new institutions at the national and departmental levels, teaching materials, equipment for materials production, materials such as paper and ink required for production, vehicles required for distribution of materials, and the studies associated with the research and evaluation component include

11.2 work years of technical assistance. Grant funds (\$1.5 million) will provide .5 work-years of long-term technical assistance. The GOB contribution (\$2.7 million) will cover salaries and other administrative costs. The initial obligation of grant funds will be in FY 1980 with the loan funds being obligated in FY 1981. The following table presents the summary financial plan:

SUMMARY FINANCIAL PLAN
(\$000)

	<u>AID</u> <u>Grant</u>	<u>AID</u> <u>Loan</u>	<u>GOB</u>	<u>TOTAL</u>
I. Technical Assistance	1,500	-	-	2,200
II. Training	-	1,108	-	1,108
III. Equipment	-	966	-	966
IV. Materials	-	1,475.5	-	1,475.5
V. Vehicles	-	200.5	-	200.5
VI. Research and Evaluation	-	250	-	250
VII. GOB Personnel	-	-	2,194	2,194
VIII. Operating Expenses	-	-	180	180
IX. Inflation	-	500	236	736
X. Contingency	-	500	90	590
TOTAL	<u>1,500</u>	<u>5,000</u>	<u>2,700</u>	<u>9,900</u>

The long-term technical assistance will be provided by a six person team and will include specialists in bilingual education, training, curriculum and materials development, materials production, research, and evaluation. Each advisor in bilingual education, training and curriculum will provide 4.5 years of services. Each of the others will serve for shorter periods. The bilingual education specialist will serve as the chief of party.

A prime factor contributing to the implementation problems experienced in the education sector in Bolivia is the uniformly poor experience in utilizing the host country contracting mode for major procurement activities. As discussed in Section IV, C, the Mission

has decided to forgo host country contracting for the technical services and major equipment requirements of the project in an effort to avoid the serious delays in implementation which have been caused in other projects. These procurement requirements will be accomplished through AID-direct contracting.

D. Summary Findings

The Project Committee has determined that the proposed activities are technically and financially feasible for completion within the proposed disbursement period of five years. Support for bilingual education has been forthcoming from senior levels of the GOB and the teachers' unions. The model selected has been analyzed carefully and is considered to be the most appropriate means for achieving the project purpose. By improving educational opportunities for Quechua-speaking children it is expected that the project will reduce dropout rates, increase retention rates and will enable the children to function naturally in the home as well as in a second culture.

E. Project Committee

Robert Burke	Office of Development Resources, IAC Bureau, AID/W
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Approved by:

Malcolm H. Butler	Acting Director, USAID/B
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II. BACKGROUND AND DETAILED DESCRIPTION

A. Background

1. Education in Bolivia

The first efforts in education for rural children in Bolivia began with the idealistic efforts of the "escuela-ayllu" or community school, in the Warisata area of the highlands during the late 1930's. This school was based on the life of rural people, and involved the parents of the school children in supporting and directing the school. These types of schools were also founded in the Llica area around the Salar de Uyuni and in the Vacas area of Cochabamba. However, rural education was not officially authorized until the educational reform of 1954, at which time education became universal and free through the sixth grade.

The type of rural "nucleo" school system organized under these pioneer efforts continues. Each nucleo consists of a central school, as well as six to ten sectional schools, located from an hour to a day's walk from the central school. The central school has a complete primary cycle, kindergarten through fifth grade and sometimes also the intermediate cycle, grades six through nine. Sectional schools usually have one teacher working with grades one to three, but some have several teachers and include up to the fifth grade. Children who finish the highest grade at the sectional school may continue to the central school, if it is near enough.

Despite the great expansion of rural education since 1954 its current state after 26 years is rife with problems. Even though rural students account for one-half of all students entering school, only 14% complete 5th grade, and thus may achieve functional literacy. At least a third drop out even before the second grade and more than 80% before the 4th grade. Much of this problem is due to serious differences in the treatment of rural and urban education. For example, in 1975, the per pupil expenditure by the Ministry of Education (MEC) for rural primary students was \$51.90 and for urban primary students, \$63.50. It should also be noted that 28 per cent of the urban enrollment was in private schools, which provide a higher quality education to the middle and upper classes.

Rural education suffers from a lack of investment in building and equipment such as desks and blackboards, inadequate training of teachers, and nearly complete lack of provision of curriculum materials and teaching aids. In addition, many rural school teachers are untrained and uncertified. Most rural school facilities, equipment, and materials are provided by the parents of the children.

In 1973, the Government of Bolivia assessed the education sector by means of the "Global Diagnosis of Bolivian Education". This study, published in 1974, concluded that rural education should be made relevant to the needs of rural school children in order to achieve a decrease in the very high drop out rate among these students.

Although approximately sixty per cent of all Bolivians speak either Aymara, Quechua, or Guarani as a first language, and learn Spanish, if at all, in the school, at market centers, or through migration, Spanish is the language taught and used in the rural schools. Much of the drop out rate in the first three grades is related to the linguistic problems caused by the insistence on using Spanish in the beginning states of learning to read and write. Many rural teachers recognize the problem and, if they know the local indigenous language, improvise methods of teaching Spanish as a second language. Still, these methods are unscientific, often confusing to the child, and do not constitute a proper solution to the language problem. However, there is now a recognition of language problem in rural Bolivian schools, and growing demand for bilingual education by educators, parents and political leaders as a solution to this very serious problem of drop outs.

Although still faced with many problems, the Government of Bolivia and its Ministry of Education are becoming more responsive to the education needs of rural people. The GOB has a number of education activities pertinent to rural areas that are not part of the MEC. These include school building activities through the National Community Development Service and the Civic Action of the Armed Services. Indeed, most rural schools are built through the auspices of one of these organizations. The Ministry of Labor's Organization for Training of Manual Labor (FOMO) has carried out numerous short training courses in rural communities.

Within the Ministry of Education itself, the decentralization of activities carried out through the District Educational Development Centers in each of the nine departments (initiated under the Mission's Education Management project) has made it more responsive to rural education. No longer do teachers or community leaders need to travel to La Paz to deal with government authorities about school matters, salaries, assignments for teachers. Decisions on community requests for changes in school administration or in teaching staff, now can be made at the Departmental level.

The extent of this increased awareness of and responsiveness to the needs of rural education is reflected in growing support in the Ministry of Education for bilingual education. Support for bilingual education has been stated on several occasions by the

Rural Teachers, the most important being in the form of a resolution at their Pedagogical Congress in December, 1979. Further, the Confederation of Bolivian workers has publicly declared their support of bilingual education. Finally, the National Congress has formed a commission to study the question of indigenous language, and a bill is before Congress which would require that Quechua and Aymara be taught in the schools.

2. Relationship of the Project to Mission Strategy

This project bears direct relationship to the FY 1982 CDSS as a cornerstone for the education strategy and as clear support of the overall program strategy.

It is a cornerstone for the sector strategy in that its objective of keeping rural children in school longer to educate them better attempts to prevent their entrance into the poverty cycle (the first and most effective step the education strategy can accomplish). Also it is directed at the primary school level of rural children who speak indigenous languages, and as such, works with the most needy element of AID's target group.

The Bilingual Education project also lends strength to the overall Mission strategy in several ways. First, as it is strongly called for by the Ministry of Education, and the rural teacher's union, it bolsters the Mission emphasis on local identification and articulation of needs. Second, because it will be implemented through District Education Centers and rural central primary schools, it supports the Mission emphasis on decentralization. And third, since this project attempts to increase individual opportunity for economic integration and equity, over time it is expected to increase income, productivity, and popular participation in local legal development efforts -- all important elements of the Missions program strategy.

In addition, the project has been designed so as to address four efficiency measures identified in the FY 1982 ABS: 1) replication of a successful project activity using more local management; 2) geographic concentration; 3) utilization of other donor experience; and 4) increased utilization of host country analytical and managerial capabilities. The project expands upon pilot activities carried out under the Rural Education I project by further concentrating efforts in the department of Cochabamba and expanding into the neighboring, ethnically similar department of Chuquisaca. Efforts of the Peruvian Government (supported by the Germans) in a bilingual education program in Puno were reviewed during the design stage of this project. Finally, greater utilization of local research (analytical) and managerial capabilities is contemplated through the contracting of local entities such as the Bolivian National Institute of Linguistic Studies (INEL)

and the departments of linguistics of various Bolivian universities.

Previous projects in the education sector have dealt with decentralization, curriculum development, and teacher training. Education Management, while an ambitious project that did not accomplish all its objectives, did achieve the decentralization of administration to the departmental level (discussed above). Rural Education I has carried out a redesign of the rural primary school curriculum, introducing bilingual education in the first three grades of school in selected areas on a pilot basis. Rural Education II focuses on the training of rural school teachers and has made significant strides in providing courses for rural normal school instructors and in service training through mobile teams to nucleo school teachers. Each of these projects strengthens the capability from local to national levels to provide schooling that is relevant and useful to rural children.

Recent efforts by USAID project managers and Bolivian project chiefs to promote a better understanding of project activities and to develop closer links with MEC and other education officials and organizations have been very effective and have resulted in improved project implementation. Within the past six months there has been a significant increase in meetings, project visits and other contacts involving the project managers and chiefs, the Minister and various subsecretaries of Education, the MEC legal advisor, project personnel, and directors of the teachers' union. In part because of the success of these efforts, project activities are not experiencing unnecessary delays, and the rate of disbursements for the projects has increased significantly. Annex K provides additional details on recent Mission and GOB efforts in this area.

In addition to this improvement in the implementation of ongoing education projects, the proposed project has been designed so as to avoid other problems related to institutional organization and procurement of project services and commodities. As discussed in detail below (see Sections III.B., Institutional Analysis and IV.C., Project Contracting and Procurement), this project will create a new institution in the MEC which will become a permanent entity within the Ministry's structure, thereby assuring full integration of bilingual education into MEC activities. In addition, the procurement of technical services and major equipment will be handled either through a procurement agent or by the Mission.

3. Relationship to Other AID Activities in Education

Bilingual education efforts have been present in several other Mission projects. These include the USAID-sponsored Educational Management, Rural Education I, and Rural Education II projects.

In the Educational Management project a language education component was organized, which collected a great deal of data on language use in Bolivia. Due to internal problems in that project, the data were never processed. A recent technical assistance advisor recommended that certain portions of this data (specifically related to distribution of language use) be processed under the Bilingual Education project to provide information on area specific curriculum design. Because of difficulties in questionnaire design and data collecting, the advisor was of the opinion that the remainder of the data would be difficult to process properly.

Under the Rural Education II project, three persons have received 10 months training in linguistics and bilingual education at a Colombian university. They will teach bilingual education components of courses at the Higher Institute of Education in Tarija (which is responsible for training the faculty for the rural normal schools), and at the six rural normal schools in the project. These efforts in pre-service training will support and be coordinated with the Bilingual Education project. However, since the training activities under Rural Education II are directed toward the normal schools and have been programmed, an expansion to include training for primary level school teachers in bilingual education is not possible since it would significantly expand the scope of the project's training activities, would require a major reprogramming, and would seriously disrupt implementation.

As part of a centrally funded educational television project (currently in the design stage) the University of Tarija may produce up to five hours of videotapes on bilingual education. These tapes could be used for orientation/training of administrators, project technicians, and rural normal school teachers at the rural normal schools themselves or at the Higher Institute of Education in Tarija. As the ETV project is developed, its design will include an examination of how it can best coordinate with the Bilingual Education project.

The largest bilingual education effort has been made through the Rural Education I project in the Department of Cochabamba. Begun with first grade in 1978 in six central primary schools and their smaller sectional schools, the program has been extended to all twenty-one central primary schools in the project, as well as their sectional schools, and now reaches the third grade. The program uses a transitional model of bilingual education. It begins reading and writing in the children's native Quechua language, introducing oral Spanish in the first grade, and achieving a transition to reading and writing in Spanish by the end of the third grade. A long-term advisor and a team of four Bolivian technicians have developed the entire curriculum for these three grades. They have written and produced the teaching materials, including readers based on the culture of the rural Quechua-speaking children, and have carried out teacher training in bilingual education methods.

The program has been well accepted in the schools, and is already showing benefits. The technical assistance team contracted to assist in the development of the proposed project found that, in those schools where pilot bilingual education activities have been implemented, school attendance, student retention, and reading progress rates are significantly better than prior to initiation of project activities. For example, retention in project schools from first to second grade was 98% compared to a national average of 63%. Further, the sociolinguistic and bilingual education advisors on this team informally tested children's reading for comprehension, and found that the children did understand what they were reading. Reading tests administered to fifth graders in Spanish-taught schools at the beginning of this project showed that many students simply were mouthing the words, and could not answer simple questions about the content of the stories.

While a formal evaluation of the bilingual component of Rural Education I will not occur until August, 1980, this investigation by experienced, knowledgeable experts in bilingual education, linguistics, and curriculum as well as informal study by USAID personnel knowledgeable about bilingual education provides sufficient basis for considering the success of this program to be more than adequate to proceed with its continuance and expansion.

Nonetheless, further A.I.D. assistance is required to adapt, extend, and institutionalize bilingual education in Bolivia. Because of the very small number of technicians working in the pilot bilingual effort and the relatively recent expansion from six to 21 nucleo primary school systems, these technicians have been able to give little in-service support and supervision to newly trained bilingual education teachers. Also, the Bolivian bilingual education technicians have had no opportunity other than on-the-job training to develop expertise in bilingual education. Finally, the pilot bilingual education program has not been connected with the appropriate Ministry of Education entities such as the District Center for Educational Development and the National Department of Curriculum. An unfortunate effect of setting up a project implementation organization such as the National Coordinating Office for Rural Education (CONDER) (as was done for the Rural Education I and II projects) external to Ministry of Education entities and functions, is that at the end of the project, however successful its programs might be, the institutionalization of those programs is much more difficult because there is no regular Ministry organization charged with carrying them out. (see Section III.B. Institutional Analysis).

The curriculum and especially the materials developed under Rural Education I also must be adapted to permit their use

where other variations of Quechua are spoken. While these materials have been excellent for the Cochabamba region, the vocabulary and syntax must be modified to eliminate variations specific to that area and to assure appropriate language usage. These materials also must be produced in a cheaper format, so that bilingual education can be extended over wide areas at a minimum cost.

The Bilingual Education Project has been designed to eliminate the kinds of problems encountered in Rural Education I. It will be an integral part of the institutional structure of the Ministry of Education; the curriculum and materials will be useable over wide areas of Bolivia with little or no adaptation; equipment for project centers and schools is being kept to a minimum and either will be purchased directly by the Mission or a purchasing agent, or, in some cases, through small contracts with local manufacturers who will be subject to community pressures for completion; and the technical assistance will be contracted directly through USAID, a measure which already has support among Ministry personnel.

4. Other Donor Activities

Other donor activities in Bolivia in the field of bilingual education include a small effort under the World Bank sponsored Northern Altiplano Integrated Education project in La Paz Department and schools for lowland tribal groups sponsored by the Summer Institute of Linguistics. There also have been certain other small programs dealing with indigenous languages, notably the Aymara Commission on Language and Literacy, the Institute for Aymara Culture and Language in La Paz, the National Academy of Quechua in Cochabamba, and the National Institute for Linguistic Studies. Another bilingual education project in Puno, Peru, dealing with both Quechua and Aymara, should be mentioned since it falls within the same cultural and language area as the Aymara spoken in the La Paz Department.

The bilingual education effort being implemented as part of a larger World Bank integrated rural development project was begun in 1978, and received its first technical assistance in late 1979. Unfortunately, this effort, begun in just nine schools, only focussed on the use of oral Aymara as a bridge to learning to read in Spanish. It did not establish a specific technical approach to bilingual education such as the transitional or full model; rather, it serves as graphic evidence of the need to do so, as is the case with the proposed project. The World Bank project has suffered from very high turnover of personnel as well as internal administrative problems and consequently, progress has been limited. The technical assistance for bilingual education is due to end in August 1980, with the advisor having been able to accomplish little. Thus, the future of bilingual education efforts in that project are in doubt.

The efforts of the Summer Institute of Linguistics (SIL) in bilingual education with the lowland tribes may reach as many as 70,000 people, the majority of whom are adults. It constitutes an important demonstration of bilingual education in Bolivia by what is essentially a missionary group.

The bilingual education project in Puno, Perú, sponsored by the Peruvian and German governments, is a very interesting and apparently successful program in both Quechua and Aymara. The program was initiated in 1975, and began with basic research on Quechua and Aymara linguistics. Currently, it has developed and introduced bilingual education techniques through the second grade. Because the Aymara is similar to that of La Paz, this program possibly could be adapted at a later time for La Paz Aymara.

5. Project Strategy

Taking into consideration the current situation of rural education, language use, and previous experience in bilingual education in Bolivia, the strategy of the project is to expand and institutionalize the Quechua-Spanish bilingual education efforts in Cochabamba and adapt them to the Chuquisaca region. Also, the project will carry out the basic and applied research necessary to support these efforts and later expand bilingual education to other regions.

To assure that bilingual education will become institutionalized within the Ministry of Education, a new National Department of Bilingual Education will be established. In Cochabamba and Chuquisaca, departmental bilingual education centers will be established.

In support of this strategy, the project has been designed so that it will contribute to the development of an official GOB bilingual education policy by demonstrating how bilingual education can be carried out successfully. Much of the past opposition to bilingual education has been due to ignorance; many people believe that only Quechua will be taught and, therefore, keep the children from learning Spanish properly (which most children do not achieve now in the traditional Spanish-only schools). The example of a successful bilingual education program in two departments will demonstrate the need for the development of an official bilingual education policy and, further, will contribute to a demand for bilingual education in other departments.

The project is designed so that it can be expanded through the creation of additional departmental bilingual education centers and additional training for technicians and specialists (much of which could be accomplished by the core Bolivian staff trained by this project). The establishment of centers in Oruro and Potosí would permit bilingual

education to reach nearly all Quechua speaking children. Expanding bilingual education to cover Aymara speaking children would not be difficult since there already exists a successful bilingual education program in Puno, Perú, which has components similar to those included in this project. Reaching the Aymara children of La Paz would require the establishment of a bilingual education center and the adaptation of the materials from the Puno program to the Bolivian context (this would not be a major exercise since the Aymara spoken around Lake Titicaca varies only a little between Perú and Bolivia). For Aymara speaking children outside the influence of communities surrounding Lake Titicaca -- in Potosí and Oruro -- the respective departmental bilingual education centers could take the responsibility to adapt the northern Aymara materials to the speakers of the dialects in those areas.

In following this strategy, it is estimated that a total of ten years (including the life of this project) would be required to provide bilingual education to these two major linguistic groups. The additional cost to the GOB of expanding this project would consist of the cost of creating and staffing three new departmental centers, additional training costs (which would be low because the staff trained under this project would be available for that purpose), and additional printing equipment. Since the project is designed to have parents pay for the bilingual materials produced by the project (textbooks, etc.) the cost of materials will not have an impact on the MEC budget. The financial analysis for the project estimates that recurrent costs to the GOB for bilingual education is only a fraction of the annual MEC budget. Given the minimal costs that would be associated with an expansion of the project, the additional impact on the MEC budget would not be significant (see Section III.E.4).

B. Project Description

1. Goal and Purpose

The goal of the project is to assist the Ministry of Education to establish a more efficient and equitable public education system institutionally and substantively responsive to the needs of rural Bolivia. In achieving this goal, the project will benefit rural school children by helping them develop their learning skills including (1) reading comprehension, first in their home language, and, second, in Spanish and (2) the ability to express themselves orally and in writing, first in their home language and, second, in Spanish.

Attainment of these skills will lead to a greater opportunity for economic integration and equity. Over time, the result is expected to be increased income, productivity, and participation in local development efforts.

The project purpose is to improve educational opportunities for Quechua-speaking primary school children by introducing the use of the home language in the first three grades of instruction.

2. Geographic Focus and Beneficiaries

The project will focus on bilingual education for Quechua speaking children in selected areas of the departments of Cochabamba and Chuquisaca. These departments have the highest concentration of Quechua speakers in Bolivia. Cochabamba is the site of the pilot bilingual education program funded by the Mission as part of the Rural Education I project. In Chuquisaca, access to rural areas is easier compared to other Quechua speaking areas such as Potosí and Oruro, and the rural population is more open to outside influences. Also, in Potosí and Oruro there is a significant incidence of Quechua-Aymara bilingualism and Quechua-Aymara-Spanish trilingualism which creates a much more complex linguistic situation. This, in turn, makes it more difficult to design a bilingual education project for those regions. Finally, Chuquisaca has long been a leading education center for Bolivia. Therefore, Chuquisaca is an optimum locale in which to expand the pilot effort started in Cochabamba.

A total of 65 nucleo schools will participate in project activities, including the 21 nucleos in Cochabamba which are participating in the pilot bilingual program. The participation of the 21 nucleos in Cochabamba is important because the activities initiated by the pilot program were being implemented in only six nucleos until early 1979 when they were expanded to the current 21 nucleos. However, this expansion was not accompanied by sufficient in-service teacher training nor an increase in technical support staff and, as a result, further support (beyond that which can be provided by the Rural Education I project) is needed to consolidate and institutionalize these activities. The remaining 44 nucleos will be divided between Cochabamba and Chuquisaca. Section II.B.2.c., below, discusses what methods will be used in selecting the participating nucleo schools.

The project will have the following direct beneficiaries:

- 27 bilingual education specialists
- 65 bilingual education technicians
- 1,560 bilingual education teachers
- 84,240 primary school children

In addition to the direct beneficiaries, the project also will provide indirect benefits to siblings and other family members of students receiving bilingual education. Participating students will bring many new materials home which will be shared with family members, thereby helping to increase general education levels at home. The

number of persons who will benefit indirectly from the project is estimated to be 337,000.

3. Bilingual Education Model

Implementation of the above elements of the project will be based on a full bilingual education model. While following the basic theory of the transitional model which has been implemented under the bilingual education component of the Rural Education I project, the model places increased emphasis on establishing basic skills in the home language before introducing Spanish as a second language. It is based on the more recent findings that the development of second language competence and eventual academic attainment is a function of the level of the child's first language competence when intensive exposure to the second language begins. (See Section III.A., Technical Analysis, for a complete discussion on the selection of this model).

The major characteristics of this model include:

- development of basic skills such as oral expression, writing, reading, and numbers manipulation using Quechua as a medium of instruction;
- development of oral and literacy skills in Quechua at least until the student becomes an independent reader in Quechua (high levels of comprehension and critical reading skills); and
- introduction of Spanish as a second language providing both informal and formal learning opportunities. Spanish reading will not be introduced until students (a) have some oral language background in Spanish and (b) have an independent reading capability in Quechua.

The objectives of the full bilingual education model are that each student (a) develop his/her greatest academic potential; (b) become functionally literate; (c) develop the highest levels of Spanish literacy possible; (d) maintain and/or improve his/her positive self-concept; (e) have knowledge of and appreciation of his/her home language and culture and the general culture of Bolivia; and (f) develop cross-cultural skills so as to function naturally in the home as well as in a second culture.

4. Project Design

The major focus of the project will be on teaching Quechua children to read and write in their home language while simultaneously providing intensive instruction in Spanish as a second language. Curricula and supporting materials will be developed which gradually

FIGURE 1

OVERVIEW OF PROGRAM DESIGN - PRESCHOOL TO GRADE 5 .

Subject Grade	Pre-School	First	Second	Third	Fourth	Fifth
Pre-reading and reading in Quechua	x	x	x	x	x	x
Spanish oral language development (formal and informal)	x	x	x	x	x	x
Spanish Language Reading				(x)	x	x
Content areas in Quechua (e.g. Math)	x	x	x	x	x	x
Content areas in Spanish (e.g. Social Studies)		(x)	x	x	x	x
Cultural Activities (in Quechua and/or Spanish)	x	x	x	x	x	x

Pre-School level refers to Pre-Básico or Educación Inicial.

(x) Instruction delivered for only part of school year.

increases the amount of Spanish used as the principal means of instruction so that from the fourth grade on emphasis will be on learning through Spanish. Beginning in the fourth grade, however, the program will also include a maintenance program of written and oral expression and reading in Quechua.

A secondary focus of the project will involve research on variations of Quechua, changing patterns of language use, and analysis of Spanish and Quechua spoken by children. Under Rural Education I, information on language was provided by local technicians; this was feasible since the project dealt with only one region. For the Bilingual Education project, however, comparative linguistic data is required to adapt the Cochabamba materials and develop new materials with vocabulary and syntax appropriate across the various regions of project implementation. Part of the research also will provide information necessary for later expansion of bilingual education to other areas.

As discussed in detail below, a National Department for Bilingual Education will be established in the Ministry of Education which will have overall implementation responsibility for the project. The Department will provide general policy development and guidance related to bilingual education. Curriculum and teaching materials also will be developed by the Department.

At the departmental level, bilingual education centers will be established to provide direct support to project activities. Training and curriculum specialists at the centers will develop regionally oriented curriculum and materials. They also will work closely with nucleo technicians who will provide on-going teacher training in the nucleo school system. Production specialists at the centers will carry out production of all curriculum and materials.

Creation of these entities is an important feature of the project because they will become the institutional framework necessary to continue bilingual education as an integral part of Ministry of Education activities. Once support from this project has ended, the necessary cadre of professional and technical staff will be in place which will be capable of implementing bilingual education activities and expanding them to new areas.

To support these activities, the project will finance four components: (1) training; (2) curriculum and materials development; (3) materials production; and (4) research and evaluation. Project funds also will finance long and short-term technical assistance and basic equipment requirements.

a. Training

The project will provide training at five separate levels (see Training Pyramid, below). Level I prepares specialists in bilingual education training and curriculum and materials development. Level II, conducted by Level I specialists, trains technicians who work directly with preparation of teachers, both in-service and pre-service. Level III, the core of the program, is the continuing in-service training of teachers. Level IV provides an orientation in bilingual education for key people working in the field of rural education as well as a liaison with other projects and organizations working in the same or related fields. Level V is the public relations tool of the project, which is aimed at all Bolivians but with emphasis on the participating communities. Annex II, Exhibit F, contains specific suggestions for course curriculum for each of the five levels.

Selection of Level I specialists will be made through a national search. Level II technicians will be nominated from the nucleo systems in which they already work. Since the pool of women available for training tends to be limited, a special effort will be made to identify and encourage their participation. In the past, problems have been encountered in finding women to participate in long-term, third country training. Since this training will be short-term and mostly in Bolivia, this should not be as much of a problem. Also, through the training provided, women will have increased opportunities for professional advancement which will help enhance their position as role models for other women.

1) Level I

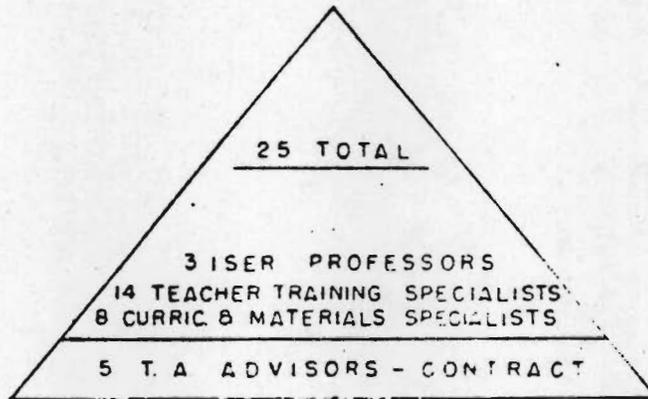
Project Specialists include eight curriculum and teaching materials development specialists to work in the National Department of Bilingual Education in La Paz, fourteen teacher training specialists to work out of the two Departmental Centers for Bilingual Education in Cochabamba and Chuquisaca, and three teacher training specialists for the Higher Institute of Education (ISE) in Tarija. (the latter three specialists already work at ISE, but will benefit from direct experience with bilingual education programs).

Training at this level will total 5 months. The initial two months training will take place in Perú, with specific focus on the activities of INIDE in Lima and the Experimental Bilingual Education Program in Puno*. The two Departmental Directors for -----

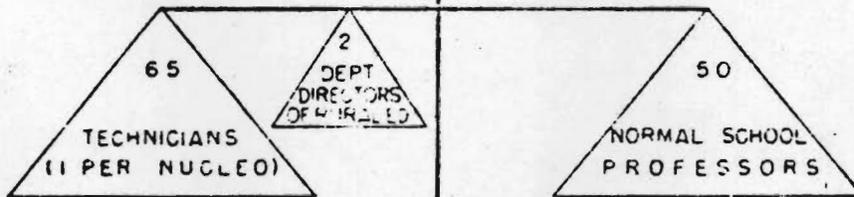
* INIDE and technicians sponsored by the German government have been carrying out this successful bilingual program, which uses a model very similar to that proposed in this project, for the past several years.

TRAINING PYRAMID

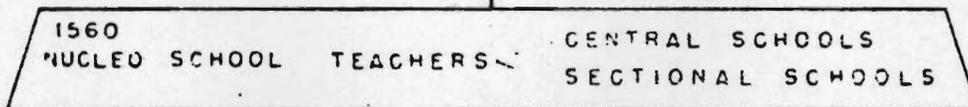
LEVEL I



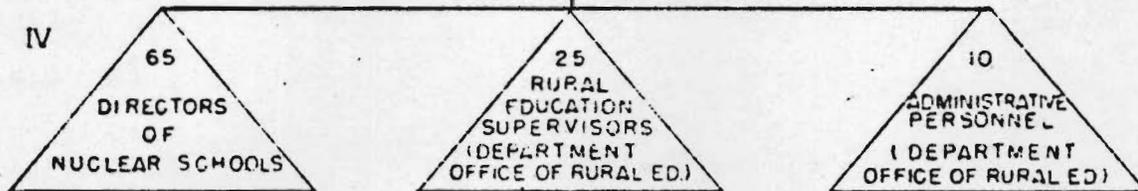
LEVEL II



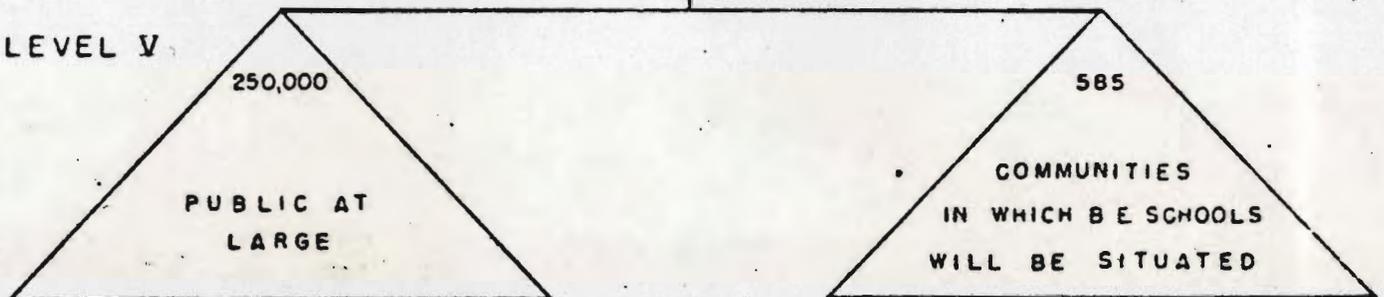
LEVEL III



LEVEL IV



LEVEL V



Rural Education of Cochabamba and Chuquisaca will also attend this training. On their return to Bolivia the 25 specialists will receive three months additional training in La Paz from members of the technical assistance team.

These specialists will meet annually for a one week update seminar in La Paz to interchange ideas and to receive training in the latest developments in bilingual education. Members of the technical assistance team will provide this training.

Visits to familiarize a limited number of high level officials in education with bilingual education programs in other countries such as Perú and Paraguay will take place early in the project. These visits will serve to increase their knowledge of bilingual education programs and to gain their support for the Bolivian program.

2) Level II

There will be one bilingual education technician in each nucleo school system to provide in-service education to the teachers. These Level II personnel will be trained by the Level I specialists in two groups, one in each Departmental Center for Bilingual Education. The initial training will be for a two month period and will focus on preparing the technicians to train nucleo school teachers in bilingual education methodology. Afterwards, they will meet annually in their departmental centers for one week seminars to share problems and successes as well as to learn to use new materials produced for teachers' use with children.

Pre-service training in the two project area rural normal schools will be implemented through two weeks of training for those instructors directly involved with language education, and several days orientation for the other instructors. These programs, to take place in 1982 at Vacas and Villa Serrano Rural Normal Schools, will be taught by the three ISE specialists in bilingual education.

3) Level III

Level III training is provided to teachers in each of the nucleo school systems. Each year the Level II - trained technicians will meet with the participating nucleo and sectional school teachers for two weeks of instruction in bilingual education. During the school year the technicians will travel on a regular basis to each school to provide each teacher with support and supervision.

Finally, while greatest emphasis will be given to training of first, second and third grade teachers, Level III also will involve fourth and fifth grade teachers in the participating nucleo and sectional schools because the model employed by the project includes a maintenance program in these grades which requires the use of bilingual education methodologies. Also, at those schools which provide pre-school (kindergarten) instruction, teachers will be included in the training program since they will be able to prepare younger students for the more intensive bilingual program which will begin in the first grade.

4) Level IV

The training program at this level involves orientation of nucleo school system directors, rural education supervisors, and other administrative personnel of the two departmental educational development centers. The technical assistance team will travel to each departmental center for several days in 1981 to provide an orientation to concepts of bilingual education in general and, specifically, to the Bolivian bilingual education program.

5) Level V

Level V is an on-going public relations program for the Bolivian public in general and especially for parents and community leaders to gain their understanding and support of the bilingual education program. The Departmental Centers for Bilingual Education will prepare radio and television scripts and will seek the cooperation of state and private/public interest entities (such as Acción Loyola in Sucre, which is a community development organization) to diffuse information. The project centers also will prepare simple one page mock-ups for newspapers, in Spanish and Quechua, for inclusion in the cultural section. Additional copies of these newsheets will be distributed to community parents of leaders at meetings held by the nucleo technicians.

b. Curriculum and Materials Development

The principal focus of this component will be on the first three grades of primary school. However, given that the full bilingual education model stresses competence in the home language prior to initiation of intensive second language instruction, some assistance will be provided in order to include language activities in Quechua and a limited introduction of oral Spanish in the curriculum for pre-school students. In addition, since the model indicates that continued competence in the home language promotes second language acquisition, assistance also will focus on including Quechua maintenance activities as part of the fourth and fifth grade curricula.

For the first three primary grades, this component will expand upon the developments achieved in the pilot program of the Rural Education I project, create new materials and field test new curricular approaches in essentially monolingual Quechua-speaking areas. In the Rural Education I project, emphasis has been given to development of textbooks, primers and readers which are designed to provide a transition to all Spanish instruction by the fourth grade (the pilot program, utilizes the content of the reformed curriculum being developed as part of the Rural Education I project). This project will be able to reproduce and use many of these materials basically in their present form, but will develop a curriculum which places more emphasis on home language competence as prescribed by the full bilingual education model. To support the new emphasis on home language competency, additional materials in the form of worksheets, pamphlets, etc. will be developed and tested as part of the new curriculum.

With a basic philosophy that learning is achieved when the curriculum and related materials are designed with the environment in which they are to be applied in mind, this component will develop:

- subject matter which is within or related to the experience of the student;
- vocabulary which is adjusted to the linguistic capacity of the student;
- materials which reflect the interests of the student;
- time schedules which are adapted to the attention span of the student; and
- learning activities which take into account the socio-cultural environment of the student.

Therefore, the project will develop a curriculum which deals almost exclusively with rural life and values. Also, applicable materials from other institutions concerned with the bilingual question (National Institute of Linguistic Studies, Summer Institute of Linguistics, etc.) will be used to supplement project materials. Content will cover all basic subjects currently taught in the schools.

Some Quechua language textbooks that are needed to round out the total curriculum for the first three grades, will be developed in manuscript form at the curriculum center of the National Department of Bilingual Education. These manuscripts will then be

sent to the Departmental Centers for Bilingual Education (in Cochabamba and Sucre) for production and subsequent distribution to the schools. Other books of a regional nature will be developed at the Departmental Centers

The bilingual curriculum for the first three grades will include (see Annex II, Exhibit G, for a more complete description):

First Year

- cultural enrichment activities (including some which involve the teaching of oral Spanish as a second language);
- introduction of basic reading in Quechua;
- introduction of basic number concepts and number processes;
- oral Spanish as a second language;
- elementary writing skills in Quechua; and
- work sheet exercises.

Second Year

- instruction in basic subjects of reading, math, science and social studies;
- continuation of cultural enrichment activities which will eventually include the use of booklets/pamphlets dealing with a variety of subjects;
- formal oral curriculum for teaching of Spanish as a second language; and
- continuation of the use of work sheets.

Third Year

- instruction in basic subjects using texts developed by the National and Regional Curriculum Centers for Bilingual Education;
- use of enrichment programs, worksheets and special subject pamphlets; and
- instruction of Spanish as a second language throughout the year.

Also for the third year, special materials will be developed by the departmental centers to increase the facility of third grade students to read and comprehend the Spanish language.

For the pre-school year, emphasis will be on training teachers to introduce language activities in Quechua as well as limited oral Spanish usage as part of the curriculum. Development of materials is not contemplated, although some teaching equipment such as flannelgraphs and manipulable materials will be provided.

In the fourth and fifth years, instruction will continue in basic subjects using Spanish as the language of instruction. Maintenance programs for Quechua oral, reading and writing abilities as well as to foster cultural pride and awareness will be introduced with special materials to be developed.

In addition to the curriculum for the first three grades, this component will include limited activities at ISE and the normal schools in the participating departments of Cochabamba (Vacas) and Chuquisaca (Villa Serrano). At ISE, a basic methodology course in bilingual education will be introduced. The course will provide instruction on the application of bilingual curriculum and will be required as a condition for graduation. Specialized courses for students who plan to teach bilingual education classes at the rural normal schools also will be developed and offered. In addition, since ISE is responsible for the training of technicians and instructors for the rural normal schools -- and is being supported by technical assistance in curriculum development under the Mission's Rural Education II project -- the activities of this project will be closely coordinated with other curriculum development programs.

The primary function of the rural normal schools is providing pre-service training for rural school teachers. With assistance from bilingual education specialists from ISE and the national and regional departments of bilingual education, specialized training in bilingual education, which can be incorporated into this general role of the normal schools, will be developed and utilized as part of the basic curriculum. At least one methods course in bilingual education will be required of all students in the normal schools as a condition to graduation.

c. Materials Production

In the isolated, rather primitive villages in which most of the rural children live, communication and transportation are difficult, there is no electric power, modern conveniences are rare and money very scarce. These conditions act as restraints on the instructional programs of the schools, as they tend to dictate

against the use of many valuable and quite common materials and instructional aids. Such important teacher aids as visual projection equipment, sound equipment, photographic equipment and even duplication equipment are almost unheard of in the more remote communities.

These conditions in the project area pose a serious limitation on the quality and variety of materials which can be produced to support the bilingual curriculum. In determining which materials should be produced, the following factors must be studied: appropriate materials which can be utilized; learning activities which will be generated by the use of specific materials; whether necessary training is available to assure effective use of the materials; whether the materials are relevant to the curriculum content and to the needs of the students; the initial costs of the materials; replacement requirements; replacement costs; and the cost to service and maintain the proposed instructional materials.

Each departmental center will establish a production unit which will be responsible for studying all of these factors and, based on the results obtained, producing the required materials (worksheets, pamphlets, etc.). The separate production units are justified for several reasons. First, production requirements will be relatively small and economies of scale will not be gained from a single, centralized center even if the bilingual program is expanded to a nation-wide scale. Second, distribution will be facilitated to the rural areas. And, third, application of the results of local studies can be initiated without unnecessary loss of time.

As part of intensive review, specific guidelines have been developed for materials production and distribution, and a sequence and process for manuscript development has been designed, as has a sequence and process for materials production. In preparing these guidelines, the factors outlined above have been taken into consideration, with the realization that modifications may be required once some experience has been gained and evaluations show whether they are appropriate. Annex II, Exhibit H, presents the details of the guidelines and production processes.

d. Research and Evaluation

During the first two years of the project, a series of small research studies will be undertaken to establish the linguistic base required for adapting and developing curriculum and teaching materials. These studies are necessary since the proposed project will be working over a much larger area than the Rural Education I Project, with consequent greater variation in language. This variation must be taken into account in textbook and materials preparation. One

member of the technical assistance team will work with Bolivian agencies or (if no local qualified specialists are available at the time) outside consultants on the following studies: (1) identification and pedagogical implications of the different varieties of spoken and written Quechua; (2) Spanish and Quechua syntax of 5-12 year olds; (3) processing of the sociolinguistic data collected as part of the Education Management project (511-V-051); (4) base-line data on antecedent conditions in rural school communities participating in the project. Annex II, Exhibit I contains the estimated time frame and technical inputs requirements for each of these studies.

In addition to the role they will have in curriculum and materials development, these studies also are expected to be useful if a decision is made to expand project activities into other Quechua speaking areas.

To complement these research and data collection activities, the project will include a major evaluation effort. While not intended to provide direct inputs for any of the project components, the evaluation data will be important for assessing the effectiveness of project inputs and determining what changes can be made to improve implementation. The project will include control group study, external mid-term evaluations, and a final project evaluation report. Section IV.A. details the plan for carrying out the evaluations. Annex II, Exhibit J, contains the specific design and variables that will form the evaluation process.

e. Technical Assistance

The project will finance six long-term technical advisors, one each in the areas of bilingual education, research, evaluation, teacher training, curriculum and teaching materials development, and materials production. It is expected that the advisors will begin working in the sixth month of the project. Three will provide approximately 4.5 the other three will provide together 11.2 work years of services each for a total of 13.5 years of technical assistance. The advisors will be based in La Paz where they will work directly in the National Department of Bilingual Education, assuring its growth as a permanent entity in the Ministry of Education. Each advisor will travel frequently to the departmental centers and nucleo school systems.

Because an in-depth knowledge of bilingual education is required to direct the activities in each of the other technical areas effectively, the chief of party will be the bilingual education National Department of Bilingual Education. The research, evaluation, teacher training and curriculum and teaching materials advisors will have as their counterparts the specialists (Level I) to be

trained under the project. The materials production specialists' counterparts primarily will be the two chiefs of the regional production centers.

The six long-term technical advisors will assist the MEC to: (1) adapt and further develop the model of bilingual education as well as to carry out the research and evaluation upon which a sound bilingual education program must be developed; (2) train the specialists, technicians, and teachers to carry on the bilingual education program; and (3) establish the curriculum and teaching materials development and production systems necessary to continuance of the program -- in sum, to achieve the institutionalization of bilingual education as a Bolivian program. A further result of the long-term technical assistance will be the existence of a policy development framework for bilingual education in the MEC.

Approximately 12 months of loan financed short-term technical assistance will be provided to assist in carrying out the basic studies discussed in Section II.B.4.d. above. Under the direction of the research, local research agencies such as the National Institute for Linguistic Studies or one of the universities will be contracted to provide the necessary assistance. Local personnel also will be contracted to assist with the collection of data for project evaluations. For the two major evaluations in the third and fifth years of the project, additional advisors will be contracted.

f. Equipment and Materials

Project funds will finance basic equipment requirements for the nucleo schools, the departmental bilingual education centers, and the National Department for Bilingual Education.

However, the major focus of project funds in this area will be to finance needed materials such as textbooks, teachers' guides and other supplementary materials to be used as part of the new bilingual curriculum.

At the departmental centers, necessary equipment to support their administrative functions (typewriters, desks, files, etc.) and a limited number of vehicles required to distribute materials and to maintain communications with the nucleos will be provided with project funds. Basic equipment for the production centers (offsets, mimeographs, etc.) also will be financed.

Finally, project funds will finance the basic equipment required for administrative functions of the National Department for Bilingual Education.

Annex II, Exhibit C, Project Budgets, presents a detailed listing and estimated cost of all the equipment to be financed with project funds.

g. Selection of Schools

Schools to be included in the project will be selected from those currently participating in the bilingual education component of the Rural Education I project and other schools in the departments of Cochabamba and Chuquisaca. There are a total of 179 nucleo schools in those departments of which a total of 65 nucleo schools will participate in the project. The number of sectional schools will depend on the final selection of the nucleo schools since the number of sectional schools associated with a nucleo varies from nucleo to nucleo. There are a total of 1549 sectional schools in the two departments. The majority of the teachers in these schools are bilingual in Quechua and Spanish. Nonetheless, project officials will work with local administrators to assure that all teachers working with the project are bilingual.

A committee formed of the National Director for Bilingual Education and the Departmental Directors of Rural Education will make the final selections following initial contacts with schools and communities made by the specialists at the Departmental Centers

for Bilingual Education. In making these contacts, the specialists will apply the following criteria to help in making recommendation on final selection:

- at least 75% of the students use Quechua as the home language;
- parents indicate their approval of the school participating in the project;
- school director and teachers indicate their approval of the school participating in the project; and
- school director and teachers agree to participate actively in nomination of teachers who could serve as the núcleo system technician.

h. Institutional Framework

The project will create new institutions at the national and departmental levels which will be responsible for overall implementation of bilingual education activities. Unlike the implementation arrangements in previous USAID education projects in Bolivia, it is intended that those institutions become permanent, integrated entities in the Ministry of Education. Four alternative organizational arrangements were analyzed (discussed in detail in Section III.B.1 below) before selecting the proposed locational scheme.

At the National level, a new Department of Bilingual Education will be created directly under the Director General of Rural Education (see Figures 2 and 3 for relationship to overall Ministry of Education organization and the flow of responsibilities for bilingual education). This places the national director for bilingual education at a senior level in the Ministry and permits direct interaction and cooperation with other national level agencies, such as the National Department of Technical Services, in the development and implementation of the bilingual education program. This senior position of the national director and the fact that the Department will be a permanent entity in the Ministry are important features designed to avoid problems which hampered the implementation of the Education Management and Rural Education I projects. The entities responsible for implementation of these projects were not well integrated into the Ministry and were not intended to become permanent institutions. They were not in a strong position to coordinate with other Ministry activities or to receive

support from appropriate agencies. As a result, they encountered difficulties in gaining acceptance for various initiatives and overall implementation suffered.

At the Departmental level, a Center for Bilingual Education will be established within the structure of the District Education Development Centers (DEEC). This organizational structure places the responsibility for bilingual education in rural school, directly with the decentralized entity within the Ministry of Education which has overall responsibility for the implementation of rural education programs.

It should be noted that the organizational chart in Figure 3 is divided into two sections: "A", which indicates the policy-making and administrative levels, and "B", indicating the operational level. This allows for a clearer perception of flows of command and of sequences of operations procedures. As policy emanates from the MEC it flows smoothly through the lines of command of the General Office of Rural Education, down to the District Office and from there to nucleo and Sectional Schools. Likewise the operational sequence has been structured to minimize bottlenecks and facilitate the actual implementation of policy and administrative decisions.

5. End of Project Status

Project achievements will be measured continually over the implementation period because the research and evaluation component of the project includes collection of baseline data and continued updates of the information. Project inputs, particularly through technical assistance efforts, are designed to establish the National Department of Bilingual Education as a permanent institution in the Ministry of Education.

Specific accomplishments expected by the end of the project include:

a. Training

- 27 specialists in bilingual education received training in Perú and in Bolivia;

- 65 nucleo school bilingual education technicians trained;

- pre-service instruction on bilingual education offered at the ISE/Tarija, at the Vacas and Villa Serrano Rural Normal Schools;

Figure 2

ORGANIZATION OF THE MINISTRY OF EDUCATION AND CULTURE (MEC)

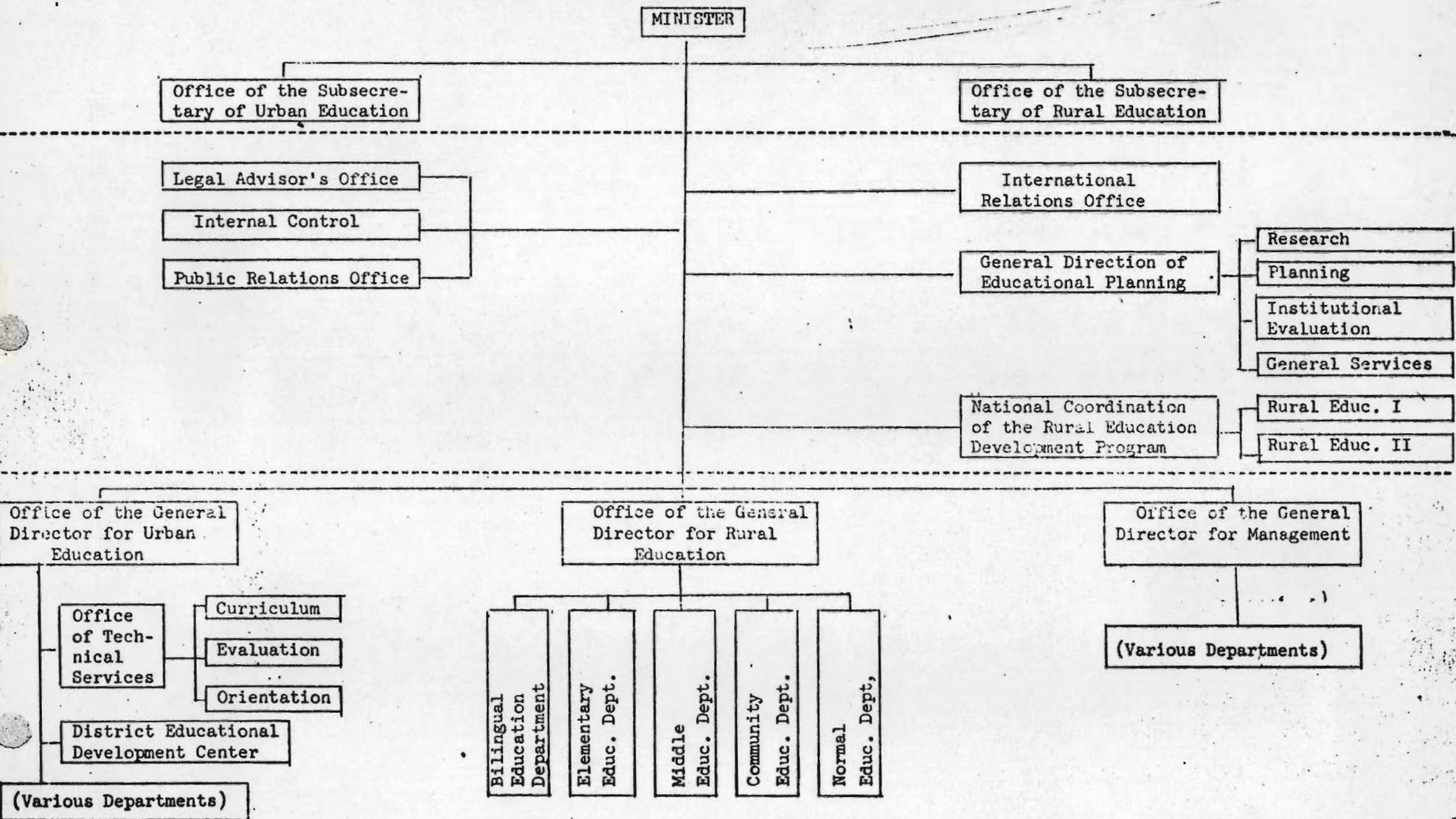
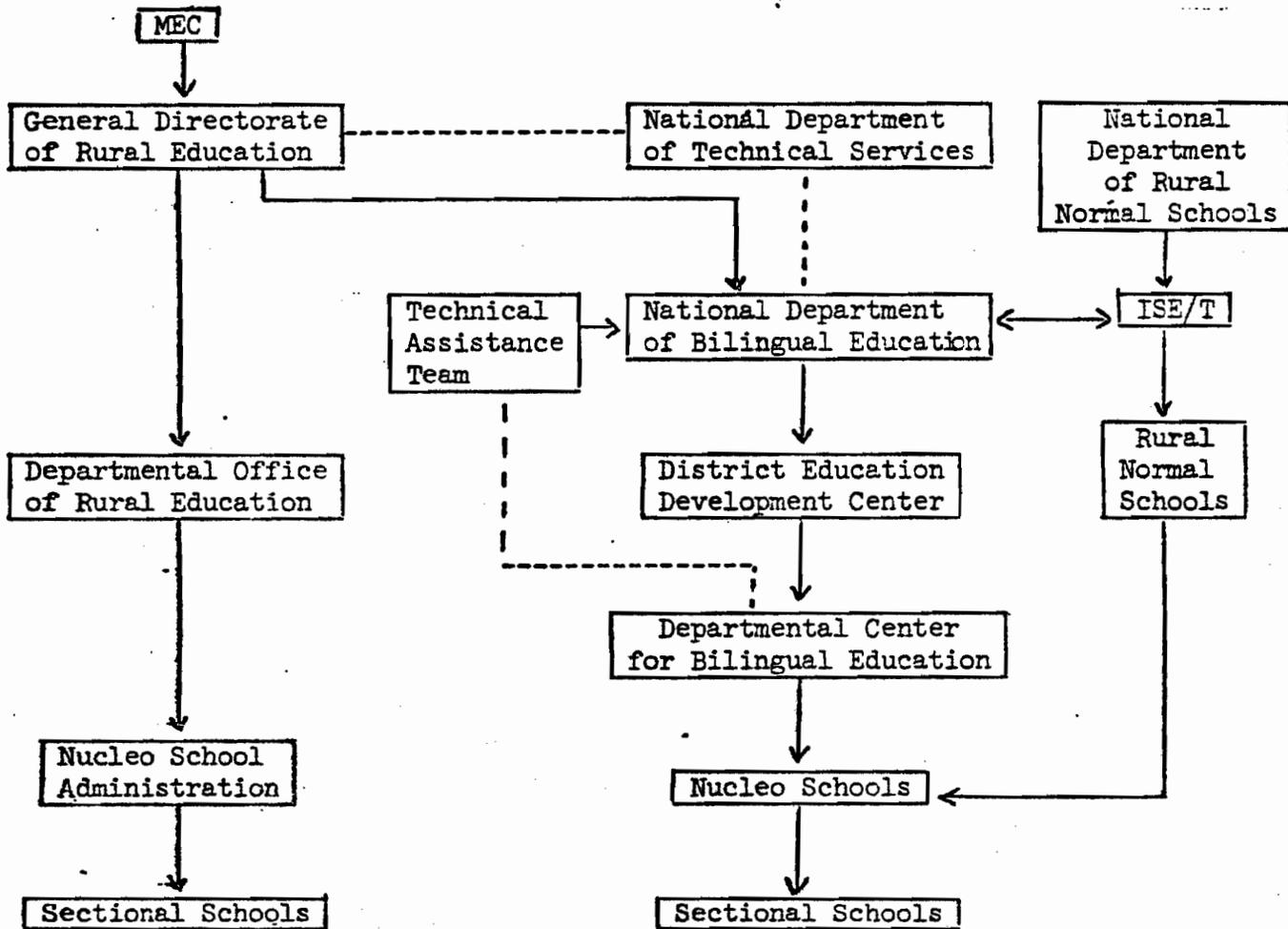


FIGURE 3

Flow of Administrative Authority

Operational Sequence



- regular in-service training in bilingual education provided by technicians to all pre-school through fifth grade teachers in the participating nucleo systems;

- administrators at national, departmental and nucleo levels received orientation about bilingual education; and

- continual public relations campaign about bilingual education, in effect and directed at general population.

b. Research and Evaluation

- three basic language studies completed;

- socio-linguistic data from Education Management project processed and analyzed; and

- baseline data collected and updated for use in project evaluation.

c. Curriculum and Materials Development

- technical staffs working at the national and departmental levels;

- pre-service curriculum in bilingual education developed for rural normal school instructors;

- pre-service curriculum in bilingual education developed for normal school students; and

- curricula and materials in bilingual education developed by 1982 for first grade students, by 1983 for second grade students, and by 1984 for third grade students.

III PROJECT ANALYSIS

A. Technical Analysis

1. Language Variation in Bolivia

Although Guaraní and other lowland indigenous languages are spoken by a very small percentage of the people, the major indigenous languages in Bolivia are Aymara and Quechua.

About 25% of the Bolivian population are native speakers of Aymara, who mostly inhabit the Altiplano regions. This language may be divided into the northern dialect spoken around Lake Titicaca, and the southern dialect spoken in the Department of Oruro, and the western portion of the Department of Potosi. The northern dialect continues to be used and, perhaps due to the growing feeling of Aymara pride, resists major incursion by the Spanish language, although many young men are becoming bilingual. The southern dialect in some areas is undergoing fairly rapid change to Spanish. Considerable research on Aymara dialects has been done, and could serve as the basis for any bilingual education program for Aymara children.

Although Quechua is spoken by about 35% of the Bolivian population, most of whom live in the valley regions, no wide ranging study of regional or social variation in Quechua has been done in Bolivia. Most students of Quechua believe that regional differences are not very large (certainly nothing like those which occur in Peru), and most assert that the differences do not impede intelligibility. One study showed that social dialects which range from the more urban to the more rural can also be rated for Quechua. Nevertheless, in the preparation of materials, attention must be given to differences and every effort made to avoid using terminology, morphology, or syntax which might confuse the novice reader.

2. Analysis of Proposed Bilingual Education Model

a. Schooling in a Bilingual Setting

Over the last fifteen years research and evaluation conducted in the area of bilingual education has shown that positive results tend to be associated with situations fostering additive forms of bilingualism; that is bilingualism is achieved when students acquire a second language at no expense to first language development and cognitive/academic progress.* Stated another way, research has shown that the development of second language competence and eventual academic attainment is a function of the level of the child's first language competence when intensive exposure to the second

* An example of additive bilingualism would be an English-speaking Canadian student who enters school at the kindergarten level in a

language begins. This implies that, because the level of competence in the second language is dependent on the level attained in the first language, it is important to ensure that high levels of first language ability are attained.

Two types of educational programs have been relatively successful in fostering additive bilingualism --immersion programs and full bilingual education programs. Immersion programs are generally designed for elementary school children who, (1) come from an upper or middle class background, (2) speak the national or prestigious language at home, (3) are highly motivated to learn the second language (but at no expense to the first language or academic achievement), (4) have or will certainly have high levels of first language proficiency and will use the first language for the majority of their daily activities, and (5) are taught in classes composed completely of second language learners and taught by native speakers of the second language. On the other hand, full bilingual programs are designed for minority language children who (1) do not speak the national or school language at home, (2) are from a language group which is experiencing a shift to the national language, (3) have been characterized by poor school achievement, poor self-concept, and subtractive bilingualism in regular school programs, (4) do not usually gain high levels of first language proficiency, and (5) generally come from a lower socio-economic status. Full bilingual programs are designed to develop basic skills and high levels of first language proficiency and at the same time add high levels of second language skills.

Other types of educational programs for bilingual settings have not been able to consistently foster additive bilingualism. In fact, in almost all cases such programs result in continued monlingualism or subtractive bilingualism for participants.

b. Current Schooling in Rural Bolivia

Most Quechua-speaking students in rural Bolivia attend traditional schools in which all of the materials and curriculum are delivered through Spanish. The traditional program can be characterized as a submersion (sink or swim) model in which students do not continue to develop the first language, remain functionally illiterate, do not acquire a second language and generally find the school experience very unrewarding. As a result, many students drop out after one or two years of school.

Second language teaching programs called "Castellanización" have not significantly improved the educational opportunities for Quechua-speaking students. While students may acquire

French immersion program. Because of the sociolinguistic circumstances, this student will be able to add high levels of French speaking ability

additional amounts of oral Spanish skills, their general educational capacity is not increased.

For the last three years, the USAID has financed a pilot transitional bilingual education program in twenty-one rural Quechua-speaking nucleos in the Cochabamba region as part of the Rural Education I project. Designed to develop basic skills and literacy through Quechua in grades 1-3, the program then attempts to provide a transition for students into the regular Spanish language curriculum by grade 4. While the transitional bilingual program avoids some of the pitfalls of submersion and second language programs, the extent of the logical contradiction involved with the transitional model becomes evident in the fact that minority Quechua-speaking students in the early grades of the transitional program are expected to make so much progress in the cognitive/academic skills underlying Spanish literacy. As initially designed, the project expected that after two or three years students would be at a level where they could compete on an equal footing with their monolingual, Spanish-speaking peers who have had all of their instruction in Spanish. Thus, while the theory of bilingual education utilized in the Rural Education I project is correct and appropriate, and many of the materials developed are excellent and can be used in the expanded bilingual effort proposed by this project, the time frame of the transitional approach is not realistic and, according to recent research, is likely to be a constraint to achievement of bilingualism.

c. Bilingual Education Model Selected

Following an analysis of the current research and theory in bilingual education and observation of the present situation in rural schooling in Bolivia, the full bilingual education model has been selected for this project. This model is appropriate because:

- It provides the most educationally - and cost-effective means to achieve literacy among Quechua-speaking students.

- It promotes high levels of Quechua-speaking ability, and thus development of high levels of Spanish language proficiency will also be possible given adequate exposure to Spanish.

without endangering his/her ability to speak English as a native speaker. At the same time, this student is able to make normal cognitive/academic progress in school while learning French. No retardation takes place. On the other hand an example of subtractive bilingualism would be a Bolivian Quechua-speaking student in a semi-rural area. Although Quechua is the language of the home, only Spanish is taught in school. At the time the student enters school (kindergarten or first grade)

- It provides students with informal Spanish language acquisition opportunities complemented by formal learning opportunities. Students will be exposed to Spanish in the most appropriate manner.

- Students will be able to make normal progress in subject matter classes delivered through Quechua while they are learning Spanish.

- Students would not suffer from most of the psycho-educational problems faced by minority children, since the Quechua language and culture would be treated as co-equal with the Spanish language and Hispanic culture.

- It provides students with opportunities to develop cross-cultural (bicultural) skills needed to effectively operate within both the Quechua and Spanish-speaking worlds.

The model will enable Quechua speaking students to realize their fullest linguistic, academic, social and personal growth. Details of the primary characteristics of the model, its components and supportive conditions are provided in Annex II, Exhibit D.

B. Institutional Analysis

1. Rationale for Institutional Structure of the Project

A major objective of the project is to develop an institutional structure that will result in bilingual education becoming a permanent, integral part of the rural education efforts of the Ministry of Education. With this in mind, four alternatives were considered which could be expected to achieve the objective. In analyzing each alternative, a total of ten characteristics were reviewed which not only provide a sound organizational structure but also a structure that could be easily integrated into the Ministry of Education. These characteristics are as follows:

- It is addressed to the needs of the target groups;
- It is unhampered by bureaucratic processes that were designed for management of other facets of the parent institution;

first language abilities cease to develop or are extremely slowed. At the same time, the student does not have the cognitive/academic language proficiency in Spanish to take advantage of literacy instruction and other subject matter delivered in Spanish. First language abilities actually decrease more rapidly than second language abilities increase. The results will be subtractive bilingualism in some form. Either the student will withdraw and remain monolingual Quechua, gain non-native

- It is staffed with qualified, job-effective personnel, both at the administrative and operational levels;
- It is accepted as a worthy component by other elements of the parent institution;
- Its accomplishments are directly related to its purpose;
- Its time frame is realistic and achievable;
- Its implementation is cost effective;
- Its structure is woven into the administrative framework of the institution it is designed to serve;
- Its "End of Project Status" bears a direct relationship to permanent improvements in quality of the institution it has served; and
- Its implementation procedures are streamlined from decision-making to execution.

Figure 3 (see Section II.B.4.b.) presents the alternative which has been selected as the most appropriate for this project. Schematic presentations of the other three alternatives are in Annex II, Exhibit E. There follows a brief discussion on each alternative and a rationale for why it was or was not selected as the organizational framework for the project.

- Alternative No. 1: Project Responsibility Lodged in the National Coordinating Office for Rural Education (CONDER)

This alternative would provide a simple administrative arrangement designed to provide quick responses and timely execution. However, its structure would minimize consultation and coordination with other Ministry agencies and, therefore, would invite the same implementation problems which have hampered other Mission education projects. This structure also would not permit achievement of the institution building objective of the project since CONDER is not a permanent entity in the Ministry and will go out of existence once its project responsibilities have ended. For these reasons, this alternative was rejected.

like proficiency in Spanish but lose ability in Quechua or achieve only very low levels of proficiency in both languages--semi-lingualism. Regardless of the resulting form of subtractive bilingualism, the student will be a very low academic achiever and most likely functionally illiterate.

- Alternative No. 2: Project Responsibility Lodged in the National Department of Technical Services.

This alternative has a number of positive features, including that it would provide strong interaction and coordination of bilingual education activities with other MEC activities and agencies. Nonetheless, the structure of this alternative is complex and would place bilingual education as simply another component of the National Department of Technical Services (along with curriculum, teacher training and evaluation). For bilingual education to become an effective and important part of the structure of the Ministry of Education, it should not be a component of a larger department since this alternative would diminish the likelihood that it would reach the desired stature. This alternative, therefore, has been rejected.

- Alternative No. 3: Project Responsibility Lodged in the Office of the National Director General for Rural Education

For project implementation, this alternative is similar to Alternative No. 2 but is simplified from an administrative point of view. Fewer agencies would become involved in general operations, making it easier to address the job at hand. Like Alternative No. 2, however, this structure would leave bilingual education without the stature needed for it to become an effective part of the Ministry's general organization and would diminish the likelihood that it would achieve the desired level of importance. Therefore this alternative also has been rejected.

- Alternative No. 4: Project Responsibility Lodged in a Newly Created Department of Bilingual Education under the Office of the National Director General for Rural Education

This is the alternative selected for the organizational framework for the project. For project implementation it approaches the ideal in that it embraces all of the positive features of Alternatives 2 and 3, while circumventing negative aspects of each of those two options. It permits excellent coordination with the plans and progress of the Ministry of Education; it is under the authority of the National Director General of Rural Education; it is related to the National Department of Technical Services; it involves the National Office of Rural Normal Schools and the Departmental Education Agencies including the DEDCs. A salient feature of the organization is that it will contribute to "institution-building" by helping to create a workable structure for bilingual education that readily can be extended nationwide. By creating a Department of Bilingual Education at the national level, and a national director of bilingual education with an administrative/operational function, future extensions of bilingual education can be expedited.

Administrative functions are simplified for quick response from the General Director down to the most distant Central School Director. The same is true in the opposite direction, from Departmental level to the national headquarters in La Paz.

2. Analysis of Participating Institutions

The principal institutions actively participating in project activities will be the National Department of Bilingual Education and the two Departmental Centers for Bilingual Education. Previous sections have discussed the rationale for creating these new institutions as well as how they will interact with each other. This sections will discuss their organizational structures and responsibilities.

a. National Department of Bilingual Education

As a separate department reporting to the Director General for Rural Education, this department will be responsible for overall policy development and guidance related to bilingual education. Curriculum development will be a major responsibility of the department. A staff of eight curriculum specialists will do the major development work and will coordinate closely with technicians at the departmental level to assure that specific requirements are being satisfied.

Materials required to implement the curriculum also will be developed by the department. Actual materials production, however, will be the responsibility of the departmental centers.

In addition to the curriculum specialists, the department will have eight other staff members: a director, a planner, an administrative assistant, a procurement specialist, three secretaries, and a driver. The staff includes a procurement specialist in order to have an individual at the central level responsible for overseeing and coordinating the purchase on the local market of necessary supplies such as paper for work sheets and pamphlets. Recent experiences under the Rural Education I and II projects has shown that, with a person at the national level serving in this capacity, the use of local procurement for basic supplies does not create implementation problems. Major procurement activities, however, remain a problem and, to facilitate implementation, will be handled by direct AID contracts.

By virtue of its status as a permanent and separate office under the Director General for Rural Education, the department will be in a position to coordinate its activities with other national offices. This will facilitate the flow of information between the various offices and will eliminate another problem which

has hampered the implementation of other education projects.

The staff of the department will serve as the counterparts to the members of the long-term technical assistance team. In recognition of the fact that the department will be newly created, the long-term advisors will be expected to provide assistance in organizational as well as technical matters.

b. Departmental Centers for Bilingual Education

The departmental centers will receive general overall guidance from the National Department of Bilingual Education, but will have the responsibility for the actual implementation of the program. They will maintain close contact with all of the participating nucleos and will provide on-going training for the nucleo teachers. Feedback to the National Department also will be a critical element for the departmental centers. They also will conduct public awareness or public relations activities to inform the general public and the local communities of the benefits of bilingual education.

A materials production unit will be established in each center. Distribution of the materials will be the responsibility of these units.

Staffing at each of the departmental centers will include seven teacher training specialists (one of whom will serve as the chief), one printing technician and two assistants, one school equipment supervisor, an accountant, a mechanic, two secretaries, and three drivers. Members of the technical assistance team will travel frequently to the departmental centers and work directly with the staff. As at the national level, assistance also will be given in organizational matters during the initial stages of the project.

In a manner similar to that at the national level, the departmental centers will be integrated into the administrative structure of the District Education Development Centers, which are decentralized Ministry entities housing the regional offices for urban and rural education and which have overall administrative and technical responsibility for education at the departmental level. The chief of the department of bilingual education center will report to the Regional Director of Rural Education. This structure will permit close coordination with other activities underway in the region, and should assure that implementation problems do not occur.

c. Social Soundness Analysis

This section will examine general characteristics of the society and culture in which the project will operate; the problems currently encountered with schooling in these areas; and the appro-

pristeness of bilingual education as a response to those problems.

1. Project Beneficiaries

The direct beneficiaries of the bilingual education project include two groups: first, 27 specialists trained to carry out the work of the national and departmental bilingual education centers, 65 technicians trained to carry out in-service training of teachers, and the 1569 teachers who receive that training; and second, 84, 240 primary school students receiving bilingual education. Indirect beneficiaries comprise the family members of the students --siblings who will benefit from the assistance of a better educated brother or sister, and parents who can learn more now from information such as agricultural extension the child can read to the parents, and who later will benefit from the increased income earning capacity of adult offspring.

The specialists are the least rural group, but their roots are in rural areas, since they are members of the rural education system and have worked their way to higher level jobs over the years. They have a common background with technicians and teachers as children of rural small farmers or small town dwellers. The primary differences are age and experience. All of these person --specialists, technicians, and teachers-- necessarily are required to have Quechua language fluency, which implies that all come from Quechua speaking families. Nonetheless, these are persons who have chosen a teaching career as a means of upward mobility, and to one extent or another, have achieved it. One of the problems associated with this upward mobility is a tendency to look down on the very group from which these people have come; therefore in the selection of these personnel, an effort will be made to identify those persons with the most positive attitudes about Quechua language and culture.

The second group of direct beneficiaries, school children, and the indirect beneficiaries, their families, are from the most rural and poor areas of Bolivia. In the Cochabamba and Chuquisaca departments, many of the larger communities are ex-haciendas; nonetheless nearly all the residents are indigenous Quechua speakers. Before the social revolution of 1952, the Quechua-speaking Indians were bound to land owned by Spanish speaking mestizos. The Indians were permitted use of very small plots of land in exchange for days of service by the entire family to the land owner. Under this system any surplus production accrued to the land owner, not to the producers. Virtually no schooling was available. Literacy or knowledge of Spanish among Indians was very uncommon. While indigenous people have made great progress since becoming small land owners, controlling the fruits of production and investing in schooling, they continue to be a disadvantaged, low prestige group, still without the skills,

knowledge and resources to deal with the more powerful Spanish-speaking society.

The majority of Quechua families now own small parcels of land on which they cultivate corn, potatoes, beans, or barley, using traditional, generally poor technologies. In some families, income is supplemented through migration of adult males to work or to trade agricultural products. A few families have sufficient land or occasional small businesses, such as brewing and selling corn beer, so that they can invest more in the schooling of their children.

These communities are usually highly organized both in terms of family and general social structure, with relatively little economic differentiation among their members. Within this structure, men perform the political roles, and as such are the obvious power structure to outsiders. However, women have at least equal power in the economic structure, including production and marketing, and in family organization including decisions about children's schooling. Although communities are active in establishing schools (in part as a mark of community prestige), children's future roles, politically and economically, are a heavy influence in parents' decisions to invest in schooling.

Most of the sectional schools are located in very small communities or settlements, some of which are quite dispersed. These settlements are similar to the larger communities, except that they are somewhat more traditional in their social organization and economic structure, and have a higher degree of Quechua monolingualism. Although the local sectional school may have up to third grade (often all grades in one classroom) few children go beyond this level, both because there is little incentive for further schooling, in terms of future roles, and because the central school often is located several hours' walk away.

2. Traditional, Informal Education and Formal Schooling

In these rural communities, Quechua is predominantly the language used in the home, even though in some cases the parents, especially the father, may know some Spanish. Interaction between parents and child, and other indicators of traditional informal education practices, follow community norms. For example, most children will learn traditional theories of health and disease, views of the world, and ways of conducting themselves with adults, such as remaining quiet and containing one's feelings and expressions. In the school, the official language is Spanish, and although some teachers will use Quechua (if they know it) to bridge the language gap, most teachers try to force the children to use Spanish as frequently and as soon as possible, creating a great deal of pressure on a small child, who may

will be used to the more tranquil life of herding animals or helping his parents in the field.

In addition to these differences in language and environment between home and school, the utility of schooling is open to question. Given the type of agricultural life most children will live in the future, even as some modern practices are adopted, school provides little that is useful because of its abstract, academic, and semi-urban focus. Although the curriculum in rural schools is supposed to be more practical and oriented to rural life, in practice most teachers have neither the training, the materials, or the orientation to teaching in such a manner. On the other hand, as soon as children are old enough, and when parents see that the child has acquired Spanish, and reading and number ability, they find it more useful to teach their children to cultivate crops, herd animals, perform household chores, or help in the marketing, all of which they must know to function as adults.

3. Education Opportunities for Girls

These factors in differences between home and school are accentuated for girls, who usually spend more time with the mother, are less likely to know any words of Spanish, less likely to have been exposed to the outside world, and whose parents are less likely to see schooling as having any usefulness for the roles she will perform in the future. Further, given the important roles of women in production and marketing, any introduction of innovation is likely to be hampered by the low educational level of women and girls. Thus, it is essential that any new programs in school be made relevant to girls' future roles, so that parents will be more likely to keep them in school. Special emphasis will be given to this requirement in curriculum and materials development.

4. Bilingual Education as a Responsive Innovation

Bilingual education in Quechua and Spanish has the advantages of allowing intellectual development in the home language, while building a strong base for the learning of the second language, and of building appreciation for the home culture while introducing the second culture. Thus, bilingual education (as provided through the model proposed for this project) is not curriculum imposed on the rural indigenous community with a focus on an urban-oriented life which most of the children will not attain. Rather, it has its roots in the local language and culture, and prepares children with a practical curriculum for a future in the community, while also giving them the skills, knowledge and confidence to deal with another culture.

A potential constraint (which the project design considers) is that many teachers and most parents, having no previous experience with bilingual education, tend to think that beginning school

in Quechua means only Quechua will be taught. Therefore, it is essential in the selection and training of technicians and teachers and in the selection and education of communities that bilingual education be explained thoroughly, and that good relations be established and maintained between school and community so that parents can see for themselves that Spanish is being taught, and that their children have confidence in themselves and are learning more in the bilingual schools than in traditional schools. The technician and teachers for each nucleo system must hold community education programs to inform community leaders as well as parents about bilingual education and demonstrate to them the utility of this new curriculum to their children's future roles. Quite obviously, their bilingual education must also be bicultural --teaching those skills that will contribute to future economic roles in the community as well as teaching the skills --political and economic-- important to dealing with outsiders.

D. Economic Analysis

1. Methodology

Given the wide range of possibilities surrounding the principal benefits of this project, a modified cost-benefit analysis has been employed in which the direct costs associated with the project and those benefits resulting from changes in the internal costs of the education system have been computed.

In general, benefits from education projects can be divided into two categories: internal and external. Internal benefits are those which result in cost savings to the educational system. As these benefits are a direct outcome of project activities, they can usually be estimated with considerable precision. External benefits are those increases in welfare gained by students as a result of their educational experience. While no less important (indeed they are a primary reason why the educational system exists), external benefits are an indirect result of project activity and estimating their value presents numerous difficulties. Therefore, rather than attempt to estimate the value of benefits such as income gain by primary school graduates and the value of "non-economic" benefits (increased self confidence, improved self-image, ability to move comfortably in both Quechua and Spanish-speaking society, etc.), the range of values for these benefits have been explored which would be required in order to produce a positive net present value for the project at a 15 per cent discount rate.

2. Results

Annex II, Exhibit B, presents the detailed economic analysis and should be referred to for in-depth review.

The analysis shows that the internal effects of the project net out to be approximately zero. That is, the discounted value of all costs, (first directly associated with the project and, secondly, with the increased costs involved with retaining students in school) is approximately equal to the cost savings (i.e., internal benefits discussed above) resulting from reduced grade repetition. The costs, however, are slightly higher thereby giving the project a negative present value.

This analysis, however, does not include non-economic benefits which, although hard to quantify, have an important role in determining the economic feasibility of an education project. When the non-economic benefits are assigned a value of \$20 per student per year and the income gains of a rural primary school graduate is assumed to be 40 per cent greater than that of a non-graduate, a positive net value is achieved. While the former figure is subjective, it is at the low end of a range of values utilized in the analysis and is considered to be appropriate in the Bolivian context. In determining the acceptability of the apparently high level of income gains necessary to produce a positive net present value for the project, the fact that income gains occur far in the future and, thus, are heavily discounted must be taken into consideration. Given the rural-urban income differential and the considerable handicap monolingual Quechua speakers face in a Spanish-dominated society, the 40 per cent figure is reasonable. Thus, when both internal and external benefits are considered the project is demonstrated to be economically feasible.

E. Financial Analysis and Plan

1. Summary Financial Analysis

The total cost of the project over its five-year life is estimated to be \$10.2 million. Of this amount, AID grant funds will provide \$2.5 million and AID loan funds \$5.0 million.

Grant funds will be used exclusively to finance the long-term technical assistance required to support the project. The cost per work-year for the technical assistance is estimated to be \$111,000.

Loan funds will finance training costs, a small quantity of office equipment for the National Department of Bilingual Education and the Departmental Centers for Bilingual Education, equipment for the materials production units at the departmental centers, basic classroom equipment for the participating schools, teaching materials, 4-wheel drive vehicles for materials distribution, motorcycles to permit technicians from each nucleo school system to maintain regular contact with teachers in nucleo and sectional schools, and the basic

studies associated with the research and evaluation component of the project (including necessary short-term technical assistance).

The GOB contribution is estimated at \$2.7 million, or 26.5% of the total project cost, and will cover salaries of specialists, technicians and supporting staff and other administrative costs. Since the project will be creating two new institutions, the salaries of the respective staffs will represent new costs for the GOB (unless the institutions are staffed through an internal reorganization of the Ministry resulting in the assignment of existing staff to the new positions; however, the most likely occurrence is that new staff will be hired). The amount of these new salaries is estimated to be \$1.674 million over the life of the project. Technicians' salaries will not represent new costs since they are already in place. MEC's annual contribution to the project will be approximately \$540,000 which represents less than .5% of its estimated 1980 budget.

Table 1 presents the summary cost estimate for the project.

2 Disbursement Schedule

Grant funds will begin disbursement once a contract is signed for the provision of long-term technical assistance, expected to be approximately 6 months after the signing of the Project Agreement. Thereafter, disbursements will be made at equal increments over the remaining 4.5 years of the project.

During the first two years of the project, a high rate of disbursement of loan funds is expected because of the major equipment purchases which must be made. Over the remaining three years of the project, loan disbursements are expected to be made in approximately equal increments.

Table 2 provides the projected disbursement schedule for the project.

3. Training Costs

As an important component of the project, training will be an on-going activity and will require a significant portion of the budget. In an attempt to reduce the financial burden of this component, the possibility of funding certain training activities as part of the Rural Education II project was examined carefully. However, the training component of the Rural Education II project has been programmed in detail and no resources are available which could be used for the training purposes of the proposed project. A number of the Rural Education II training activities already have

been completed and several more have been designed and are scheduled to begin over the last months of CY 1980 and early, CY 1981. This timing is too soon for the proposed project and cannot be delayed. Therefore, financial resources are needed to cover all the training activities proposed by this project.

4. Recurrent Cost Analysis

Of the GOB costs associated with this Project, two will continue to be incurred once AID inputs have terminated: materials development and production, and administrative costs (including salaries for specialists, technicians and teachers). At the end of the Project these costs, on an annual basis, are estimated to be \$300,000 and \$540,000, respectively. Based on an approximate MEC budget of \$133 million in 1980, these recurrent costs will account for only 0.63% of the expenditures made by the Ministry.

This analysis is skewed because the vast majority of the MEC's budget goes for administrative costs (92%). However, in that many of the administrative staff's is already working in the Ministry, the recurrent costs associated with these personnel will be small and will not account for more than .4% of the budget (based on 1980 expenditures).

On the other hand, the amount of the MEC budget which is spent on materials is very small and almost completely oriented to the urban schools. As the project is designed, however, the materials which are produced, and will continue to be produced after the project, are inexpensive and the costs will be assumed by the student's parents. Available data indicates that rural parents currently spend approximately \$17 per year child in school related expenses. The costs of materials from this project are expected to increase school related expenses to a maximum of \$20 per year per child. Although this represents a 17.6% increase in costs, the parents will be able to see the added value gained from an improved education and will make the decision that the additional cost is worthwhile and will keep their children in school.

Thus, the impact of recurring materials costs on the MEC budget will be nil. In the judgement of the Mission, the financial burden these costs create will be acceptable to parents and they will spend the necessary amount.

Table 1

SUMMARY COST ESTIMATE AND FINANCIAL PLAN

(\$000)

	<u>AID</u> <u>GRANT</u>	<u>AID</u> <u>Fx</u>	<u>LOAN</u> <u>Lc</u>	<u>GOB</u> <u>Lc</u>	<u>TOTAL</u>
I Technical Assistance	2,500	-	-	-	2,500
II Training	-	54	1,054	-	1,108
III Equipment					
A. Office Equipment	-	-	13.0	-	13.0
B. Production Unit Equipment	-	65.8	-	-	65.8
C. School Equipment	-	-	880.7	-	880.7
D. Technical Equipment	-	6.5	-	-	6.5
IV Materials			1,475.5	-	1,475.5
V Vehicles					
A. Four-wheel drive	-	90.0	-	-	90.0
B. Motorbikes	-	110.5	-	-	110.5
VI Research and Evaluation	-	80.0	170.0	-	250.0
VII GOB Personnel	-	-	-	2,194	2,194.0
VIII Administrative Costs/Operating Expenses	-	-	-	180	180
IX Inflation	-	100	400	236	736
X Contingency	-	100	400	90	590
TOTAL	2,500	606.8	4,393.2	2,700	10,200

Table 2

PROJECTED DISBURSEMENT SCHEDULE

	<u>FY-81</u>	<u>FY-82</u>	<u>FY-83</u>	<u>FY-84</u>	<u>FY-85</u>	<u>TOTAL</u>
I. <u>Grant</u>						
Technical Assistance	280	555	555	555	555	2,500
II. <u>Loan</u>						
A. Training	60	310	244.9	244.9	248.2	1,108.0
B. Equipment						
1. Office Equipment	13	-	-	-	-	13.0
2. Production Unit Equipment	65.8	-	-	-	-	65.8
3. School Equipment	265	135	100	240.7	140	880.7
4. Technician Equipment	6.5	-	-	-	-	6.5
C. Materials	631.4	100	262.2	236.5	245.4	1,475.5
D. Vehicles	200.5	-	-	-	-	200.5
E. Research and Evaluation	124	34	44	4	44	250.0
Sub-Total	1,366.2	579	651.1	726.1	677.6	4,000.0
Total	1,646.2	1,134	1,206.1	1,281.1	1,232.6	6,500.0 ^{1/}

^{1/} Projected disbursements do not include projections for inflation and contingency. These expenditures are expected to begin in the third year of the project.

IV. IMPLEMENTATION ARRANGEMENTS

A. Evaluation Plan

The project will employ both internal and external evaluations. The internal evaluations will be an ongoing process, integral to the success of the project and essential in providing feed back and information on decision-making regarding teacher training, curriculum and teaching materials development, and materials production. This is the guidance system that constantly tells the project how well it is progressing toward its target.

In the first year of the project baseline data on all schools and communities participating in the bilingual education project will be gathered. The same types of data will be collected for two kinds of control schools and communities: first in schools only using traditional Spanish curriculum in Quechua speaking communities, and second, in schools using traditional Spanish only curriculum in Spanish speaking communities. During the next four years of the project, data from these three groups will continue to be gathered, allowing formative evaluation on a regular basis, and a final, summative evaluation at the end of the project.

External evaluations will take place in the third and fifth years of the project. These evaluations will review not only the comparative progress of the experimental and control groups, but will also study the functioning of the project itself and its relationship to other Ministry of Education entities, keeping in mind that the end product of the project includes the creation of a viable model of bilingual education for Bolivia as well as the institutionalization of bilingual education in Bolivia.

Annex II, Exhibit J, presents a detailed evaluation plan including the design and variables to be collected.

Research necessary for curriculum and teaching materials development will be carried out primarily in the first two years of the project. The first study, Quechua language variation, will take place in two stages. First, Quechua variation in Cochabamba and Chuquisaca will be studied for the purposes of this project. Second, Quechua variation in Potosi and Oruro will be studied for planning future expansion of bilingual education. Each of these studies will take about six months and may be contracted to local researchers under the supervision of the research/evaluation advisor. The second type of study concerns acquisition of Spanish and Quechua speaking children in order to prepare teaching materials consistent with the language of school age native speakers. These studies will take 4-5 months each and also may be carried out through contracts supervised by the research/evaluation advisor. The third piece of research is the processing of part of the data gathered for the socio-linguistic study under the Education Management project.

This will serve to identify language use patterns in Bolivia. If possible, this data should also be processed in Bolivia through a small contract supervised by the research/evaluation advisor.

B. Administrative Arrangements

1. Role of the Ministry of Education and Culture

The Ministry of Education and Culture through the newly created National Department of Bilingual Education will have the primary responsibility for implementing the Bilingual Education Project. The reasons for creating this administrative structure may be found in Section III.B.1, Rationale for Location of the Project. While the National Department of Bilingual Education essentially is concerned with curriculum and teaching materials development at the national level and arranging teaching materials production and teacher training at the departmental level, it must also have administrative support personnel in order to carry out the Bilingual Education Project. These personnel and their function are outlined in Section III.B.2.

2. Role of USAID

The main role of USAID is monitoring the implementation of the project through the Bilingual Education Project Committee. The responsibilities of its members are as follows:

a. Primary responsibility for monitoring the project lies with the Human Resources Development Division (HRDD). The HRDD project manager will monitor all aspects of the project including research and evaluation, training, curriculum and teaching materials development, teaching materials production, and purchase of equipment for bilingual education centers, and participating schools.

b. The Development Resources Division will be responsible for final approval of material presented by the GOB and MEC to comply with conditions precedent and special covenants as well as the drafting of Loan Agreement annexes. Responsibility for negotiation of the Loan Agreement will lie primarily with this office and the HRDD project manager. At the implementation stage of this project, DR will provide general backstopping of the project, drafting of implementation letters, and management of commodity procurement.

c. The Development, Program, and Evaluation Division will participate with the HRDD project manager in the preparation, review and approval of plans for internal and external evaluation of the project, as well as for out of country training.

d. The USAID/B Office of the Controller will review all disbursement requests for conformity with AID regulations and will ensure that adequate financial and inventory control methods are followed.

e. The Regional Legal Advisor will draft the Loan Agreement and participate in the negotiation of the Agreement with GOB officials. He will also assist in the preparation and will review all subsequent loan implementation materials which have legal implications.

C. Project Contracting and Procurement

Procurement requirements for the project can be divided into three categories: technical assistance; major equipment (such as a printing press for the production centers) and vehicles to be procured off-shore; and local procurement of materials, including textbooks, ink, paper, and school and office equipment. For the first two cases, the Mission has determined (as required by Chapter 3 of Handbook 1 B) that the MEC does not have the capacity to complete procurements of this nature. Recent experience with the Rural Education I and II projects, however, has demonstrated a satisfactory capacity to complete local procurement.

Factors which have contributed to the inability of MEC to complete major procurement activities include: high turn over of senior level personnel; inability of MEC officials to control the special procurement commissions ("Juntas de Almonedas") required by Bolivian law; and bureaucratic inefficiencies related to the contract approval and award process. A number of important procurements under other education projects also were hampered by conflicts of interest and other improprieties. The result of this inability has been severe delays in project implementation. For example, in the Rural Education II project, an RFP for architectural and engineering services for the designs required to remodel and reconstruct six normal schools was published in December 1977, but a contract was not signed until August 1979. In the case of long-term technical services for the same project, an RFP was published in April 1979 following nine months of preparation and discussion within the Ministry. All signatures on the awarded contract were not obtained until May, 1980. Several other examples exist which further demonstrate the negative effect host country contracting has had on the implementation of projects in the Mission's education portfolio.

In the case of long-term technical assistance (grant and loan) funded) for the proposed project, therefore, the Mission will take direct responsibility for the procurement of required services. An FRP will be published in the United States and a contract awarded, negotiated and signed with a Code 000 - eligible institution or firm.

Short-term, loan funded technical assistance will not be included as part of the long term contract. Rather, as this assistance will be required to support the research and evaluation component, the necessary services will be contracted locally. The Mission will take responsibility for awarding and negotiating these contracts.

For other off-shore procurement requirements, several alternatives will be examined including contracting the firm selected to provide the technical assistance to serve as the procurement agent for the MEC. Since the GOB does not have a procurement agency such as GSA, another alternative will be contracting separately with a procurement agent such as the Afro-American Purchasing Center to provide the required procurement services. A final alternative will be for the Mission procurement office to take responsibility for the procurement of the off shore items. In any case, this same office will be working closely with the National Department of Bilingual Education on all local procurements.

Much of the basic equipment to be supplied to the participating schools (desks, blackboards and bookshelves) can be constructed locally. Contracts for this equipment, therefore, will be let to small carpenters and/or artisans who will be subject to community pressure in complying with the contract. This method was recently introduced for the construction of classrooms under the Rural Education I project and has been very successful.

Vehicles for the project will be purchased in the United States with the exception of the 65 motorbikes required for the nucleo technicians. These technicians will spend a considerable amount of time travelling between the nucleo and its associated sectional schools to provide training and supervision to teachers. Public transportation to these schools does not exist since many are located in remote areas which are accessible only by trails. The schools also tend to be widely dispersed and require some time to reach. To be effective in their work, therefore, the technicians need lightweight motorbikes (approximately 125 cc - 175 cc) which can be serviced in Bolivia (including spare parts) and which previously have been demonstrated to be reliable under the conditions in the rural areas. To the Mission's knowledge, motorbikes which satisfy these requirements are not made in the United States. Therefore, a waiver is requested for Code 935 procurement of the motorbikes (probable source: Japan).

D. Procurement Plan

All procurement activities for the project, with the exception of on-going requirements for local materials such as paper and ink for the production centers, will be initiated within the

first nine months after the Project Agreement is signed. For the long-term technical assistance, the RFP will be published in February, 1981, and the contract will be awarded and signed by the end of April, 1981.

If the technical assistance contractor is also named agent for the off-shore procurement, these activities will begin immediately after the contract is signed; that is, in May 1981. If other organizations or the Mission are to be responsible for the off-shore procurement, the activities will begin in March 1981.

The final procurement activity, local manufacture of basic school equipment, will begin immediately following the final selection of participating schools and an assessment of the equipment requirements of these schools has been completed. The letting of contracts is expected to begin in July, 1981.

E. Implementation Plan

1. Implementation Period

A five-year project implementation period is required, due to the complexity of the project and the necessity for training personnel and preparing curriculum and teaching materials before implementation of the project in the schools can begin. Also, bilingual education cannot be introduced in all grades at once; rather it is a progressive process wherein this method is introduced first in pre-school and first grades, the next year in second grade, and the following in third grade. Because the instruction in fourth and fifth grades focusses on cultural awareness, it can be introduced at the same time as pre-school and first grade, and over the life of the project, modified to include instruction directed to Quechua language maintenance, as children who now are literate in Quechua proceed to these grades from the lower grades. Thus, over a five year period, the project will be able to establish the necessary base in research and evaluation, training, curriculum and teaching materials development, and teaching materials production, and extend the new curriculum resulting through all five grades of the primary level.

2. Schedule of Major Events

The following schedule of events represents the best current estimate of when major activities will take place.

July 1980	- Project authorized by AID/W
September 1980	- Project Agreement signed between GOB and USAID.
October 1980	- National Department of Bilingual Education with Director and basic staff established.
November 1980	- Sign amendments to Project Agreement to obligate loan funds.

- January 1981 - Initial Conditions Precedent met.
- February 1981 - Request for Proposals for Technical Assistance issued.
- March 1981 - Equipment and vehicles for bilingual education centers ordered. Motor-bikes for technicians ordered.
- April 1981 - Technical Assistance firm selected and contracted.
- May 1981 - Technical advisors arrive, and begin work with National Department of Bilingual Education; selection process for specialists begins; arrangements for out of country training begin; begin design and arrangements for research studies, begins arrangements for material production units.
- June 1981 - Printing equipment arrives and is installed.
- July 1981 - Specialists, Departmental Directors of Education, and Higher Institute of Education Instructors leave for out of country training; Research studies on Quechua variation in Cochabamba and Chuquisaca, on Spanish and Quechua syntax and processing of sociolinguistic data from Education Management begin.
- August 1981 - Specialists, Departmental Director of Education, and Higher Institute of Education Instructors return from out of country training.
- September 1981 - Specialists, and Higher Institute of Education Instructors continue their training in La Paz. Selection of nucleo school systems to participate in bilingual education project begins.
- October 1981 - Ministry officials travel for one month each to familiarize themselves with bilingual education programs in other Latin American nations, begin set up of Departmental Bilingual Education Centers.
- November 1981 - Specialists, and Higher Institute of Education Instructors finish training in La Paz and take up positions at bilingual education centers and at the Higher Institute of Education. Begin public relations campaign, via newspaper, radio, and television. Begin selection of Technicians. Begin adaptation of cochabamba first grade curriculum and materials and development of pre school, fourth, and fifth grade curriculum and materials.

- December 1981 - Selection of technicians from participating nucleo school systems. Begin Curriculum and Teaching Materials Development process at national and departmental centers. Begin arrangements for purchase of school equipment by participating nucleos.
- January 1982 - Directors of Nucleos, District Education Supervisors, and Departmental Directors of Education receive orientation about bilingual education.
- February 1982 - First group of technicians begins two months training. Higher Institute of Education begins including additional instruction on bilingual education.
- April 1982 - Second group of technicians begin two months training.
- June 1982 - Technicians hold first seminar for nucleo teachers; rural normal school instructors receive training about bilingual education.
- July 1982 - Rural Normal Schools begin including instruction on bilingual education; begin first bilingual education efforts in nucleo schools, using teacher made and supplementary materials first, and printed materials as they become available, first grade materials distributed; begin research on Quechua variation in Potosi and Oruro.
- November 1982 - End of school year; annual update seminar for specialists in La Paz; begin to develop second grade materials.
- January 1983 - Annual update seminars for technicians in Cochabamba and Sucre.
- February 1983 - Annual seminar for teachers at their nucleo central schools.
- March 1983 - Begin new school year, using first and second grade materials, and supplementary materials for pre school fourth and fifth grades. Continue to collect evaluation data; technicians continue to support teachers.
- July 1983 - First external evaluation.
- October 1983 - Begin to develop third grade materials.
- November 1983 - Annual update seminar for specialists.
- January 1984 - Annual update seminar for technicians.
- February 1984 - Annual seminar for teachers.
- March 1984 - Begin new school year using first, second, and third grade materials and continue

- to use supplementary materials for pre-school, fourth and fifth grades. Continue to collect evaluation data, technicians continue to support teachers.
- November 1984 - Annual update seminar for specialists.
 - January 1985 - Annual update seminar for technicians.
 - February 1985 - Annual seminar for teachers.
 - March 1985 - Begin new school year; use materials for all grade levels; continue to collect evaluation data; technicians continue to support teachers.
 - September 1985 - Project Assistance Completion Date. Final Evaluation; final seminar for specialists to provide their self evaluation of the project; technical assistance advisors depart; end of project.

F. Conditions, Covenants and Negotiating Status

1. Conditions Precedent to Initial Disbursement

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, the Government of Bolivia shall furnish in form and substance satisfactory to AID:

a. A legal opinion of the Attorney General of Bolivia or other legal counsel acceptable to AID to the effect that the Project Agreement has been duly authorized and/or ratified by the Cooperating Country and executed on its behalf and that it constitutes a valid and legally binding obligation of the Cooperating Country in accordance with all its terms;

b. A certified statement of the name of the person(s) authorized under the Project Agreement to act as the Cooperating Country's representative under the Agreement, with authenticated specimen signatures of said representatives;

c. A Ministerial Resolution of the Ministry of Education and Culture, establishing the National Department of Bilingual Education as an integral part of the Ministry, naming a qualified director for the Department, and establishing Departmental Bilingual Education Centers in the Departments in which the Project will operate; and

d. Evidence of the Cooperating Country's commitment to provide adequate budget support for necessary staff, offices, equipment and supplies in the National Department of Bilingual Education.

2. Conditions Precedent to Disbursements Other Than for Technical Assistance

Except as AID may otherwise agree in writing, prior to any disbursement or the issuance of any commitment documents under the Project Agreement, to finance other than technical assistance, the Government of Bolivia shall furnish in form and substance satisfactory to AID:

a. A financial plan for the Project specifying the amount and timing of the Government of Bolivia's contributions during the life of the Project;

b. An organization plan for the National Department of Bilingual Education, and for the Departmental Bilingual Education Centers;

c. A plan for the maintenance of vehicles and equipment to be procured with loan funds; and

d. A Ministerial Resolution of the Ministry of Education and Culture which assures that teachers trained in bilingual education under the project will remain in project schools over the life of the project.

3. Special Covenants

The Cooperating Country shall furnish AID, in form and substance satisfactory to AID, the evidence required by Item F.l.d. above for each annual budget of the Cooperating Country during the life of the Project.

4. Negotiating Status

Personnel in the MEC have been closely involved in the development of the Project. No outstanding issues remain to be negotiated, and it is expected that a Project Agreement will be signed in September, 1980.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX A
Exhibit E

Life of Project:
From FY 80 to FY 85
Total U. S. Funding \$7,500,000
Date Prepared: 10/1/80

(INSTRUCTION: THIS IS AN OPTIONAL FORM WHICH CAN BE USED AS AN AID TO ORGANIZING DATA FOR THE PAR REPORT. IT NEED NOT BE RETAINED OR SUBMITTED.)

Project Title & Number: Bilingual Education 511-0520

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>To assist the Ministry of Education to establish a more efficient and equitable public education system institutionally and substantively responsive to the needs of rural Bolivia.</p>	<p>Measures of Goal Achievement:</p> <ol style="list-style-type: none"> 1. National Department of Bilingual Education established. 2. Departmental Centers for Bilingual Education established in Cochabamba and Chuquisaca. 3. Bilingual education program ready to expand to other areas 	<ol style="list-style-type: none"> 1. MEC Records. 2. MEC and District Education Development Center records. 3. MEC Records 	<p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> 1. Political and economic instability do not adversely affect project implementation. 2. Continuing support for bilingual education in MEC, teachers union and other political entities. 3. Adequate budget support forthcoming to finance new institutions.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX I
Exhibit E

Life of Project: _____
From FY 80 to FY 85
Total U.S. Funding 47,100,000
Date Prepared: 10/11/80

Project Title & Number: Bilingual Education 511-0/20

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose:</p> <p>to improve educational opportunities for Quechua-speaking primary school children by introducing the use of the home language in the first three grades of instruction.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ol style="list-style-type: none"> 1. Bilingual education program implemented in 65 nucleo schools in Cochabamba and Chuquisaca. 2. Increase retention rates among rural students of participating schools in Cochabamba and Chuquisaca through third grade by 50% by 1985. 3. Increase daily attendance rates among rural students of participating schools in Cochabamba and Chuquisaca through fifth grade by 40% by 1985. 4. Increase the functional literacy rate among rural primary school graduates in Cochabamba and Chuquisaca by 40% by 1985. 5. Increase Spanish language proficiency of Quechua speaking students, as measured by tests of statistical significance. 	<ol style="list-style-type: none"> 1. MEC records and site visits. 2. Project evaluations. 3. Project evaluations, site visits MEC records. 4. Project evaluations. 5. Proficiency tests and project evaluations. 	<p>Assumptions for achieving purpose:</p> <ol style="list-style-type: none"> 1. Parents respond to increased educational opportunities by allowing children to continue in school. 2. Sufficient personnel and budget are available for the project.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX I
Exhibit E

Life of Project: From FY 80 to FY 85
Total U.S. Funding 47,100,000
Date Prepared: 11/1/80

Project Title & Number:

Bilingual Education 511-0520

PAGE

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Outputs:</p> <p><u>Training</u></p> <p>1. Specialists trained</p> <p>2. Technicians trained.</p> <p>3. Normal school professors trained</p> <p>4. Orientation</p> <p>5. Nucleo schools teachers trained.</p> <p>6. Public Relations</p>	<p>Magnitude of Outputs:</p> <p>1. ISE professors (3), National Department of Bilingual Education Curriculum and materials specialists (8), departmental teacher training specialists (14) and Departmental Directors of Rural Education (2) trained for 2 months in Perú and 3 months in Bolivia.</p> <p>2. One technician trained for each nucleo school (65).</p> <p>3. 50 professors from Vacas and Villa Serrano normal schools oriented and trained in bilingual education.</p> <p>4. Directors of nucleo schools (65), rural education supervisors (25) and administrative personnel from Departmental Office of Rural Education given one-time orientation on bilingual education program.</p> <p>5. On-going training for 1,560 nucleo teachers from pre-school through fifth grade.</p> <p>6. On-going campaign directed at public in general and participating communities in particular</p>	<p>1. Project records and contractor reports.</p> <p>2. Project records and contractor reports.</p> <p>3. Project records and contractor reports.</p> <p>4. Project records and contractor reports.</p> <p>5. Project records and consultant reports.</p> <p>6. MEC records.</p>	<p>Assumptions for achieving outputs:</p> <p>1. Qualified personnel are available for training.</p> <p>2. Administrators and general public continue to increase acceptance bilingual education.</p> <p>3. Materials production centers produce and deliver sufficient materials on timely basis.</p>

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX I
Exhibit E

Life of Project: From FY 80 to FY 85
Total U.S. Funding 47,500,000
Date Prepared: 11/1/84

AID 1070-28 (7-71)
SUPPLEMENT I

Bilingual Education 511-0520

Project Title & Number:

PA

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Outputs:</p> <p>A. Training</p> <p>1. Specialists trained</p> <p>2. Technicians trained.</p> <p>3. Normal school professors trained</p> <p>4. Orientation</p> <p>5. Nucleo schools teachers trained.</p> <p>6. Public Relations</p>	<p>Magnitude of Outputs:</p> <p>1. ISE professors (3), National Department of Bilingual Education Curriculum and materials specialists (8), departmental teacher training specialists (14) and Departmental Directors of Rural Education (2) trained for 2 months in Peru and 3 months in Bolivia.</p> <p>2. One technician trained for each nucleo school (65).</p> <p>3. 50 professors from Vacas and Villa Serrano normal schools oriented and trained in bilingual education.</p> <p>4. Directors of nucleo schools (65), rural education supervisors (25) and administrative personnel from Departmental Office of Rural Education given one-time orientation on bilingual education program.</p> <p>5. On-going training for 1,560 nucleo teachers from pre-school through fifth grade.</p> <p>6. On-going campaign directed at public in general and participating communities in particular</p>	<p>1. Project records and contractor reports.</p> <p>2. Project records and contractor reports.</p> <p>3. Project records and contractor reports.</p> <p>4. Project records and contractor reports.</p> <p>5. Project records and consultant reports.</p> <p>6. MEC records.</p>	<p>Assumptions for achieving outputs:</p> <p>1. Qualified personnel are available for training.</p> <p>2. Administrators and general public continue to increase acceptance of bilingual education.</p> <p>3. Materials production centers produce and deliver sufficient materials on timely basis.</p>

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Bilingual Education 511-0520

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																																			
<p>Outputs:</p>	<p>Magnitude of Outputs:</p>		<p>Assumptions for achieving outputs:</p>																																			
<p>B. Research</p>																																						
<p>1. Quechua language variation study.</p>	<p>1. Phase one of study, in project area, completed in 1981; phase two, in Oruro and Potosi completed in 1982.</p>	<p>1. Advisor's report.</p>																																				
<p>2. Community studies to identify antecedent conditions.</p>	<p>2. Study completed in 1981.</p>	<p>2. Advisor's report.</p>																																				
<p>3. Syntax study.</p>	<p>3. Both phases (Spanish & Quechua) completed in 1982.</p>	<p>3. Advisor's report.</p>																																				
<p>4. Process socio-linguistic data from Education Management project.</p>	<p>4. Data processed in 1981. Results used during initial curriculum design.</p>	<p>4. Advisor's report.</p>																																				
<p>C. Curriculum Development</p>																																						
<p>1. Curriculum development system established at National Department of Bilingual Education for curriculum to be used nation-wide.</p>	<p>1. Staff of 8 specialists working.</p>	<p>1. MEC Records.</p>																																				
<p>2. Curriculum development system established at Departmental Centers for Bilingual Education for curriculum to be used regionally.</p>	<p>2. Staff of 7 technicians working in the centers in Cochabamba and Chuquisaca. Curricula in place in schools.</p>	<p>2. MEC Records.</p>																																				
<p>3. Pre-service curriculum for bilingual education for rural normal school instructors.</p>	<table border="1"> <thead> <tr> <th>1981</th> <th>1982</th> <th>1983</th> <th>1984</th> <th>1985</th> </tr> </thead> <tbody> <tr> <td></td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td></td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>X</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>X</td> <td></td> </tr> </tbody> </table>	1981	1982	1983	1984	1985		X					X					X	X	X	X		X						X						X		<p>3. MEC Records.</p>	
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<p>4. Pre-service curriculum for bilingual education for normal school students.</p>		<p>4. MEC Records.</p>																																				
<p>5. In-service training program for primary school teachers.</p>		<p>5. MEC Records</p>																																				
<p>6. National and regional curricula for primary school students.</p>		<p>6. MEC Records</p>																																				
<p>- first grade</p>																																						
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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX I
Exhibit E

Life of Project: _____
From FY 83 to FY 85
Total U.S. Funding 7,000,000
Date Prepared: _____

PA

Project Title & Number: Bilingual Education 511-0520

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Outputs:</p> <p>D. Materials Development and Production</p> <ol style="list-style-type: none"> 1. Teaching materials development system established at National Department of Bilingual Education for teaching materials to be used nationwide. 2. Teaching materials development system established at Departmental Centers for Bilingual Education for teaching materials with a regional focus. 3. Materials production center established in Departmental Centers. 	<p>Magnitude of Outputs:</p> <ol style="list-style-type: none"> 1. Staff of 8 specialists working. 2. Staff of 7 technicians working in each of the Centers in Cochabamba and Chuquisaca. 3. Centers in operation with a staff of three at each site. 	<ol style="list-style-type: none"> 1. MEC Records. 2. MEC Records. 3. Site visits. 	<p>Assumptions for achieving outputs:</p>

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX I
Exhibit E

Life of Project:
From FY 80 to FY 85
Total U.S. Funding 10,000,000
Date Prepared: 1979-01-15

Project Title & Number: Bilingual Education 511-0520

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:	Implementation Target (Type and Quantity)		Assumptions for providing inputs:
<u>AID Grant</u>			
1. Long-term technical assistance (22.5 w/y)	1. \$2,500,000	AID Records.	
<u>AID Loan</u>			
1. Training 2. Equipment 3. Materials 4. Vehicles 5. Research and Evaluation 5. Contingency and Inflation	1. \$1,108,000 2. \$ 966,000 3. \$1,475,500 4. \$ 200,500 5. \$ 250,000 6. \$1,000,000	AID Records.	
<u>GOB</u>			
1. Personnel 2. Operating Expenses 3. Contingency and Inflation	1. \$2,194 2. 180 3. 326	GOB Records	

ECONOMIC ANALYSIS

1. Introduction and Methodology

The approach being taken in the economic analysis of this project is a modified cost-benefit analysis. The project will directly involve two types of costs: first, those costs (e.g. teacher training, purchase of materials) which are specifically attributable to the population served by this project and which will be fully treated as a cost of whatever benefits are produced by this project, and second, those costs which would not have to be incurred again in any further replication of this project (perhaps linguistic research and project evaluation). These costs will not be ignored but rather a portion of them should be attributed to the beneficiaries of this project and the remainder should be "charged" to the beneficiaries of those further replications.

Since one of the effects of the project is expected to be a substantial reduction in dropout rates, an additional cost to be considered are the costs to the Government of Bolivia of providing education to those who would otherwise have dropped out of the educational system. To be sure, this is not a net cost to Bolivia but a necessary offset to whatever benefits are produced from the additional education received by these students.

On the benefit side, there is a wide range of benefits which vary from those that are readily quantified to those which are difficult to quantify even in principle. The most readily quantified benefits are those which result from the improved efficiency of the educational system itself for a result of reduced repetition rates. It is highly unlikely that this category of benefits in itself would be sufficient to produce a positive net present value for the project, nor would one expect it to.

A second category of benefits are those which result from improved income received by those who successfully complete a given level of education and, in the process in the Bolivian case, become reasonably fluent in Spanish. In principle, those two aspects of primary education in rural Bolivia, primary education and language acquisition are separable. However there seems to be no basis statistically for trying to separate the results of the two aspects of the educational system and no compelling reason to try to do so. An important point, however, is that, both at present and at the conclusion of this project, an integral aspect of rural primary education in Quechua (and Aymara) speaking areas is the acquisition

of fluency in the economically dominant language. The absence of such fluency undoubtedly forecloses many economic opportunities. Consequently, one would expect a priori that the rates of return to investments in successful bilingual education would be higher than those typically found in a monolingual environment.

The final category of benefits are those which are frequently characterized as "non-economic". These include increased self-esteem of Quechua-speakers, pride in that heritage, and an ability to function effectively in both communities. It is clearly a misnomer to label these non-economic since the acquisition of those benefits requires the expenditure of scarce resources and individuals (and the society collectively) are willing to use those resources to acquire those benefits.

While the basis for assigning a peso value to those benefits is tenuous it may be a useful exercise to consider what notional value Bolivians would put on these benefits.

The methodology to be employed in the analysis is to develop estimates at the present value of project costs specifically attributable to the project's direct beneficiaries; (Section 2, below) to those must be added the additional costs incurred by the GOB in educating students who would, absent the project, have dropped out. (These will be estimated in Section 3). Section 4 will consider the "internal efficiency" benefits of the project. Section 5 will attempt to develop very rough estimates of the increases in income which would result from the successful completion of primary education by those who would not previously have acquired a primary education. Section 6 will consider notional values of the "non-economic" benefits and their effects on the net present value of the project.

In computing net present values, a discount rate of 15 percent has been used. Although somewhat higher than that often used elsewhere, this appears to be an accurate reflection of Bolivia's greater poverty and consequently higher opportunity cost of capital than in other countries of the region. In addition, a 15 percent discount rate has been used previously in AID projects in Bolivia and there are strong theoretical reasons for consistency between projects in the discount rate used in project analyses.

2. Project Costs

The total costs of the project are described in detail elsewhere and are summarized in Table 2-1. The Table is largely self-explanatory.

TABLE 2 - 1

DISBURSEMENT SCHEDULE AND ECONOMIC COSTS
(US\$000)

	<u>FY-81</u>	<u>FY-82</u>	<u>FY-83</u>	<u>FY-84</u>	<u>FY-85</u>	<u>Inflation & Contingencies</u>	<u>TOTAL</u>
Loan	1,364	525	627	730	770	984**	5,000
Present Value	1,364	457	474	480	440	324	3,538
Grant	250	500	500	500	500	350*	2,500
Present Value	250	435	378	328	286	0	1,677
GOB Contribution	395	454	454	454	454	430**	2,642
Present Value	395	395	344	299	260	141	1,834
Total Project at Current Prices	2,009	1,480	1,581	1,684	1,724	1,664	10,143
Present Value of Project Direct Costs	2,009	1,287	1,196	1,107	986	465	7,049
Present value of continuing GOB costs after project termination							3,316
TOTAL COSTS							10,365

* Assumed to be entirely inflation reserve.

** Non-inflation contingency is assumed to be concentrated in last three years of the project.

A few items of methodology may require further explanation. First, in accordance with accepted methodology, a different treatment is accorded the allowances for contingencies and those for inflation. The former represent real costs, either unanticipated expenditures required or increases in real (i.e. inflation adjusted) prices at cost items, and are included in project economic costs when they may be expected to occur. The latter are not economic costs which are properly measured in units of constant purchasing power (1980 US dollars in this case) and should be excluded. In practice, the distinction between these two items can be very fuzzy.

Since the purpose of the project is to institutionalize bilingual education in the GOB, costs attributable to the project (and necessary to produce its benefits) do not stop with the project's termination but do decrease substantially. It is estimated that the GOB's contribution for administration and the costs of books and materials in the project's last year will continue indefinitely at a cost of \$935 thousand per year (measured in 1980 U.S. dollars).

Finally, it is expected that bilingual education will spread beyond the nucleo schools included in this project. If this happens, certain of the costs of this project should be attributed, in part, to this larger population of ultimate beneficiaries (such costs as linguistic research, evaluation, and the costs of Central Government administration). The extension of bilingual education to all Quechua speaking areas would involve a total school population 2.5 times that of this project. If 60 percent of "overhead" costs are attributed to the additional student population, the net present value of the remaining costs of this project is reduced to \$8.2 million.

3. Costs of Rural Primary School Education per Student

A crucial figure to be estimated in the analysis is the cost per student of the rural education system in Bolivia. This figure is necessary to derive the cost saving to the Bolivia economy from reduced repetition rates, the incremental cost to the economy from increased retention rates (presumably offset by the additional benefits received by educated persons). This cost estimate also provides a useful bench mark with which the incremental per pupil costs of this project can be compared.

In estimating per pupil costs, several factors should be considered. First private as well as public costs must be considered. Second, capital costs should be distinguished from capital expenditures, -- that is, the reduction in the real value of existing buildings and equipment rather than current expenditures on new construction and purchases are the relevant values. Third, the relevant value is

the marginal cost of adding or subtracting additional students rather than the average cost of educating the current student population.

In 1978, the total direct educational budget for the Departments of Cochabamba and Chuquisaca were \$b134,5 million and \$b 65 million respectively. Of those \$b110,9 million and \$b55,8 million were direct personnel costs. (See Table 3-1). The remainder was almost entirely capital expenditures.

The treatment of capital expenditures presents a problem for which there is no very satisfactory solution. The rate at which rural school structures and equipment wear out is not known. Furthermore, the effects of changes in enrollments (up or down) in all probability do not bring about proportionate increases or decreases in the requirement for school construction. Indeed there appears to be considerable excess physical capacity in many rural schools. This combined with the long-lives nature of school building, (so that any increased expenditure or saving from foregone construction would be spread over a great number of years) has led to the assumption that those would be no effect on capital costs from enrollment changes resulting from the project.

A similar difference between marginal costs and average costs exists in current expenditures (that is, primarily personnel expenditures since the cost of books and materials is borne by students' families). USAID/B's Education Sector Assessment up date (Feb. 1977) states that there is considerable scope for increasing pupil-teacher ratios. Indeed, the ratio in rural primary schools fell from 26 in 1970 to 22 in 1974. The Ministry of Education itself has suggested a target of 40. While this may be excessive there is, undoubtedly, considerable scope for increasing rural enrollment by increasing class size. Nonetheless, the situation of individual schools varies widely. In many, pupil-teacher ratios are already high and an additional teacher would be required by increased enrollment. Similarly in specific instances reduced grade repetition would eliminate the need to hire an additional teacher. On the whole an estimate that the marginal cost is equal to one-half the average cost appears to be reasonable.

The average per pupil current (i.e. primarily personnel) expenditures in 1978 (from Table 3-1) were \$b1,880 in Chuquisaca and \$b2,698 in Cochabamba (US\$94.00 and US\$134.90). In 1979, the operating expenditures of the Ministry of Education were increased 59%. For 1980, (in view of the present budgetary stringency) a 10 percent increase is assumed, one-half the 20 percent annual increase over the last five year. Those increases would, if spread uniformly through

the educational system, produce per pupil expenditures of \$b3,045 in Chuquisaca and \$b4,370 in Cochabamba (US\$122 and US\$175 respectively at the current exchange rate).

The period 1973-1978 saw a substantial increase in per pupil expenditures. On average, total nominal expenditures increased 33 percent per year and in real terms, expenditures increased 11.3 percent per year while the school age population increased only 9.6 percent per year. Education now accounts for approximately 30 percent of the public sector budget. It is the Mission's belief that real expenditure gains on the order of those of the mid-1970's are unlikely to continue in view of the current budgetary stringency and that the most probable situation is one in which real per pupil expenditures remain constant.

The marginal public sector cost of increasing or decreasing enrollment per pupil is therefore estimated at \$b1,522 for Chuquisaca and \$b2,185 for Cochabamba. For convenience these figures will be averaged at \$b1,853 (US\$74.14) in subsequent analysis.

The private costs of education in Bolivia are believed to be substantial, although substantially less in rural areas than urban. The Ministry of Education has estimated those costs at \$b17 to \$b27 per student. It is believed that the real costs are higher. However, it is assumed that these private costs are, in practice, twice the higher officially estimated figure. The basis for this is extremely tenuous.

A further private cost is the opportunity cost of the student's time. This is not believed to be significant in the primary age group. However it is interesting to note that if it is believed that one cause of high drop-out rates at the end of the primary cycle is the cost of student's time in foregone agricultural production (e.g. in livestock tending).

Per pupil marginal cost, therefore, is estimated at \$b1,907 (US\$76.28). The major assumptions underlying this estimate are that the opportunity costs of student's time and marginal capital costs are insignificant; that marginal current costs are one-half the average; and that teachers' salaries and other current costs are accurate reflection of the opportunity costs of these grades and services to the Bolivian economy.

TABLE 3 - 1

RURAL BASIC SCHOOL ENROLLMENTS AND EXPENDITURES 1978

DEPARTMENTS OF COCHABAMBA AND CHUQUISACA

	<u>Number of Schools</u>	<u>Number of Teachers</u>	<u>Number of Students</u>	<u>Total Non Capital Expenditures (Million pesos)</u>	<u>Total Personnel Expenditures</u>
Chuquisaca	265	1,498	34,572	65,0	55.8
Cochabamba	114	2,684	49,851	134.5	110.9

SOURCE: Ministerio de Educación y Cultura, Análisis del Presupuesto, Recursos Humanos, Alumnos y Costos Unitarios del MEC, La Paz, 1979.

4. Internal Effects on the Education System

The project is expected to affect the efficiency and effectiveness of the educational system by reducing grade repetition and increasing the proportion of students who ultimately graduate. The details of this process are relatively complex. However, it is possible to simplify the analysis of this process considerably by using two summary measures of educational system performance commonly employed in the analysis of educational system effectiveness. These are the percentage of entering students eventually graduated (C) and the ratio of the optimal number of years of instruction per graduate to the actual average, taking into account the instruction given to all students whether they graduate or not (E). The projected post-project values of these statistics are designated C' and E' respectively. Other values used in this analysis are S, the number of entering students, K, the marginal cost per student per year, and N, the number of school years considered (5 if the question is the number of students completing fifth grade).

Essentially, the number of years of education prior to the project is equal to the reciprocal of E, multiplied by the number of years of education required to complete the basic course, N, 5, in this case, multiplied by the number of entering students, S, multiplied by the proportion of entering students who ultimately graduate, C. Thus the number of student-years provided equals:

$$CSN \frac{1}{E}$$

(1)

Similarly the number of years of study to be provided during and after the project is:

$$C' S N \frac{1}{E'}$$

(2)

and the net change in years to be provided is:

$$SN \left(C \frac{1}{E} - C' \frac{1}{E'} \right),$$

(3)

which can be positive or negative.

If the cost per year is K, then the net change in education costs due to increased completion and reduced repetition is

$$K S N \left(C \frac{1}{E} - C' \frac{1}{E'} \right)$$

(4)

4. Internal Effects on the Education System

The project is expected to affect the efficiency and effectiveness of the educational system by reducing grade repetition and increasing the proportion of students who ultimately graduate. The details of this process are relatively complex. However, it is possible to simplify the analysis of this process considerably by using two summary measures of educational system performance commonly employed in the analysis of educational system effectiveness. These are the percentage of entering students eventually graduated (C) and the ratio of the optimal number of years of instruction per graduate to the actual average, taking into account the instruction given to all students whether they graduate or not (E). The projected post-project values of these statistics are designated C' and E' respectively. Other values used in this analysis are S, the number of entering students, K, the marginal cost per student per year, and N, the number of school years considered (5 if the question is the number of students completing fifth grade).

Essentially, the number of years of education prior to the project is equal to the reciprocal of E, multiplied by the number of years of education required to complete the basic course, N, 5, in this case, multiplied by the number of entering students, S, multiplied by the proportion of entering students who ultimately graduate, C. Thus the number of student-years provided equals:

$$CSN \frac{1}{E}$$

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and the net change in years to be provided is:

$$SN \left(C \frac{1}{E} - C' \frac{1}{E'} \right),$$

(3)

which can be positive or negative.

If the cost per year is K, then the net change in education costs due to increased completion and reduced repetition is

$$K S N \left(C \frac{1}{E} - C' \frac{1}{E'} \right)$$

(4)

5. Increased Income Resulting from Primary Education

The basis on which to judge the returns to bilingual primary education in the form of increased future income is sketchy in the extreme. One basis for estimating this econometrically (as well as estimating returns to monolingual education of Spanish speakers) taking into account other relevant factors, is the data contained in the "southern valley agricultural survey" which is, unfortunately, not available for analysis at this time. It would be an extremely useful exercise to explore this question more thoroughly at a later date.

In any event, it is necessary to use some fairly arbitrary assumptions and use a sensitivity analysis to gain an impression of the range of possible outcomes.

Since virtually all factors of production in agriculture appear to be farmer owned, we assume that GDP per employed worker originating in agriculture in Cochabamba (and Chuquisaca) is equal to gross farmer income. In 1975, gross income per worker is estimated at \$b9,956 (US\$498). From 1975 to 1980, we estimate that the increase in nominal GDP in the agricultural sector - totalled 80 percent, giving an estimated nominal 1980 farm income of \$b17,921 per year. In addition, it is necessary to estimate the increase in real terms in the future. Two estimates of growth rates of agricultural income are available, one for Cochabamba Department, 3.176 percent per year in 1972-1975 and one for Bolivia as a whole, 4.522 percent per year from 1971 to 1977. During the years 1972-1975, the increase in agriculture output averaged two percentage points lower for Cochabamba than for Bolivia as a whole. Therefore, we project a growth rate in real agricultural income of 2.5 percent per year. (Some part of sector growth is, after all, due to extension of cultivation and increased use of purchased inputs which are not reflected in increased farmer incomes).

Students do not, of course, necessarily immediately enter the labor force, and those that do, do not receive the average farm income. The fact that students do not immediately enter the labor force on completion of elementary schooling does not mean that the increase in income should not be attributed to them. The income (monetary and psychic) of whatever they do must at least equal the income available in agriculture or they would farm. Indeed, one of the benefits from elementary education, the opportunity to participate in further education, is partially captured in this way. The same would not, of course, be true of involuntary unemployment but this appears to be quite rare.

Data is not available on the age structure of farm income. Eleven year olds do not of course earn the average farm income. Therefore, it has been assumed that, from age 11-15, graduates earn 25 percent of the average income, from 16-20, 50 percent, 21-25, 75 percent, and 26-30, 100 percent. Presumably subsequent age groups receive more than 100 percent, in order for the average to be an average.

Given these assumptions about the age structure of income, the present value of the increase in farm income, for each 10 percent increase in graduate income, assuming (as we have previously) that 50 percent of entering students will graduate from fifth grade, is equal to \$1.547 million. Further discussion of the range of possible outcomes, under alternative assumptions, is contained in Section 7.

6. Non-Economic Benefits

A significant objective of this project is to improve the self-image of Quechua-speaking students, their appreciation of and pride in their culture, and their ability to function effectively in both cultures. The assigning of a dollar or peso value to this is obviously heroic, but to fail to do so is to ignore the value of a major output of the project. An arbitrary value of \$b500 (US\$20) has been assigned per graduate per year. This may appear low to many observers. However, given the overall poverty of Bolivia it appears to us that assignment of a larger benefit to these essentially consumption benefits would be questionable. Nonetheless, given the arbitrary value assignment to this item, a sensitivity analysis using other values is conducted and their effects calculated.

The net present value of those non-economic benefits, valued at \$20 per graduate per year (i.e. all graduates, not simply incremental graduates) is \$3,072 million.

7. Sensitivity to Assumptions and Conclusions

The project is expected to produce three categories of benefits: government and private savings from reduced grade repetition, increases in future income of primary school graduates as a result of their education, and whatever "non-economic" benefits result from graduates' increased knowledge of and pride in their culture and language, ability to function effectively in either culture, etc. The project involves two categories of costs: the direct expenditures of the project plus those GOB expenditures necessary to continue bilingual education after project termination, plus the increased costs of educating those students who would previously have dropped out. For

computational convenience, the savings from reduced repetition and the increased costs associated with a reduced drop out rate have been combined.

The present value of direct project costs (including necessary follow-on costs of the GOB) was computed in Section 2 at US\$10.365 million (1980 dollars). In addition, an attempt was made to separate the costs directly attributable to the students of the 65 nucleo schools included in the project from those costs, such as research, evaluation, technical assistance, and the costs of central government administration, which, if the project is further replicated, should properly be attributed to a larger beneficiary population. If, as appears likely, Quechua-Spanish bilingual education eventually spreads to a population 2 1/2 times that included in the project, and, as a result, only 40 percent of these "overhad" costs would be attributed to students in nucleos covered by this project. As a result, the present value of those reduced costs would be approximately US\$8.2 million.

In general, the internal effects of the project net out to approximately zero. That is to say, the cost saving resulting from reduced grade repetition almost exactly equals the increased system costs from improved student retention. The net effects on educational system costs for various values of the key parameters C' and E' are given in Table 4-1. It may appear anomalous to some that the more successful the project is in producing graduates, the greater are its internal costs. However, this is a result of looking at internal effects in isolation. When all costs and benefits are brought together in Table 7-1, it can be seen clearly that higher levels of C' are associated with higher net present values of the project.

Since precise information on students' income gains is scarce, and the values to be attributed to "non-economic" benefits is highly subjective, we have chosen to consider what ranges of these values are consistent with a positive net present value of the project. Table 7-1 summarizes these. There it will be seen that if all project costs are to be attributed to students of nucleos included in the project (that is, if the project is not further replicated), a 40 percent income gain and a \$40 per graduate per year valuation would have to be attached to "non-economic" benefits (assuming, as expected, that C' is .5 and E' is .9) in order for the project to have a positive net present value. While the former appears reasonable in the Bolivia context (considering the rural-urban income differential, the considerable handicap that monolingual Quechua speakers face in dealing with outsiders, etc.), the latter appears to be somewhat high. However, if the lower estimate of project costs is used and bilingual education is eventually spread to the entire Quechua-

speaking population, then a combination of a 40 percent income gain and a \$20 per graduate per year value of non-economic benefits will produce a positive net present value. This appears to be a reasonable range for these values.

TABLE 7-1

Present Value of the Project Under Alternative Assumptions

Present Value of Project Costs (15% discount) \$10.365 million
 (including necessary follow-on costs)

Adjusted for Maximum Replication 8.200 million

<u>C'</u>	<u>E'</u>	<u>Income Gain</u>	<u>Value of Non-Economic Benefits (per grad. per year)</u>	<u>Present Value of Benefits (15% discount)</u>
.5	.9	40%	\$40	\$11,817 million
.5	.95	40%	\$40	12.698
.4	.8	40%	\$40	10.544
.4	.8	30%	\$30	8.197
.5	.9	30%	\$30	8.735
.5	.9	50%	\$50	14.900
.5	.9	40%	\$25	9.513
.5	.9	35%	\$25	8.701
.5	.9	40%	\$20	8.745
.5	.9	40%	\$16.45	8.200
.5	.9	40%	\$30.55	10.365

A final way of looking at the project is to consider what minimum level of valuation of non-economic benefits would be required to produce a zero net present value of the project. Given our best estimates of the other items on Table 7-1, C' of .5, an E' of .9 and an income gain of 40%, the result of this computation is shown in the last two lines of 7-1. If maximum replication is assumed, the minimum required value of non-economic benefits is \$16.45 per graduate per year measured in 1980 dollars. The mission is satisfied that the value of such consumption benefits is in excess of that figure.

If no further replication is assumed, the minimum required value of consumption benefits is \$30.55, a less likely but not impossible figure.

PROJECT BUDGETS

The tables on the following pages contain all the support data for the costs associated with each component of the project. A table is also included which presents the estimate of the GOB contribution.

RESEARCH AND EVALUATION (LOAN)

	(\$ 000)					
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>TOTAL</u>
Data Processing	4	4	4	4	4	20
Quechua Dialect						
Study (Contract) I. Cochabamba-Chuquisaca	30	-	-	-	-	30
II. Potosí-Oruro	-	30	-	-	-	30
Spanish Syntax Study (Contract)	35	-	-	-	-	35
Quechua Syntax Study (Contract)	35	-	-	-	-	35
Community Inventory (Contract)	10	-	-	-	-	10
Evaluation - external	-	-	40	-	40	80
Reference Library	10	-	-	-	-	10
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	124	34	44	4	44	250

TRAINING COSTS (Loan)

<u>I. Specialists</u>	<u>Course Dates</u>	<u>Duration</u>	<u>Site</u>	<u>Number Participants</u>	<u>Cost Per Participant (\$000)</u>	<u>TOTAL (\$000)</u>
A. Foreign Training						
1. ISE/R Professors	July-Aug.81	2 mo.	Peru	3	2	6
2. Teacher Trainers	"	"	Ayacucho	14 (7 per reg. center)	2	28
3. Curriculum & Teaching Materials Specialists	"	"	& Puno	8 (nat.ctr.)	2	16
4. Departmental Directors of Rural Education	"	"		2	2	4
SUB-TOTAL						54.0
B. In Country Training						
1. ISE/R Professors	Sept.-Nov.81	3 mo.	La Paz	3	1.35	4.05
2. Teacher Trainers	"	"		14	1.35	18.9
3. Curr/Tch.Mat.Spec.	"	"		8	1.35	10.8
SUB-TOTAL						33.75
C. Annual Up Date Seminar						
Specialists (B.1-3)	Nov.1982	1 week	La Paz	25 (8 in La Paz	.2	3.4
	83			17 come to La		3.4
	84			Paz)		3.4
	85					3.4
SUB-TOTAL						13.6
C. Familiarization Visits						
	Oct.1981	1 mo.	Perú, Pa- raguay, Guatemala, Mexico	4	2 at 1.0 2 at 2.0	2.0 4.0
SUB-TOTAL						6.0

TRAINING COSTS

II.	<u>Training of Technicians</u>	<u>Course Dates</u>	<u>Duration</u>	<u>Site</u>	<u>Number Participants</u>	<u>Cost Per Participant</u>	<u>TOTAL (\$000)</u>
A.	Rural Normal School Teachers (Vacas and Villa Serrano)						
	40 general	June 1982	3 days	Vacas &	40	10 materials	.4
	10 literature, reading, etc. specialists	June 1982	2 weeks	V.Serrano	10	50 materials	.5
	SUB-TOTAL						.9
B.	Nucleo Technicians Pre Service	Feb.Mar.82	2 mo.	Sucre) Cbba.)	65	500	32.5
	SUB-TOTAL						32.5
C.	Nucleo Technicians Annual Update Seminar	Jan.83	1 week	Sucre	65	100/yr.	6.5
		84		Cbba.	65		6.5
		85			65		6.5
	SUB-TOTAL						19.5
III.	<u>Nucleo School Teachers</u> Pre-Service	June 82	2 weeks	nucleos	24 (6 Cent.T.) (16 Sect.T.) 24x65=1560 Ts.	150/yr	234
	SUB-TOTAL						234
	In-Service	Feb.83	2 week	Nucleos	24 nucleo x 65 = 1560 Ts.	150/yr	234
		84					234
		85					234
	SUB-TOTAL						702

TRAINING COSTS

II.	<u>Training of Technicians</u>	<u>Course Dates</u>	<u>Duration</u>	<u>Site</u>	<u>Number Participants</u>	<u>Cost Per Participant</u>	<u>TOTAL (\$000)</u>
A.	Rural Normal School Teachers (Vacas and Villa Serrano)						
	40 general	June 1982	3 days	Vacas &	40	10 materials	.4
	10 literature, reading, etc. specialists	June 1982	2 weeks	V.Serrano	10	50 materials	.5
	SUB-TOTAL						.9
B.	Nucleo Technicians Pre Service	Feb.Mar.82	2 mo.	Sucre) Cbba.)	65	500	32.5
	SUB-TOTAL						32.5
C.	Nucleo Technicians Annual Update Seminar	Jan.83	1 week	Sucre	65	100/yr.	6.5
		84		Cbba.	65		6.5
		85			65		6.5
	SUB-TOTAL						19.5
III.	<u>Nucleo School Teachers</u> Pre-Service	June 82	2 weeks	nucleos	24 (6 Cent.T.) (16 Sect.T.) 24x65=1560 Ts.	150/yr	234
	SUB-TOTAL						234
	In-Service	Feb.83	2 week	Nucleos	24 nucleo x 65 = 1560 Ts.	150/yr	234
		84					234
		85					234
	SUB-TOTAL						702

TRAINING COSTS

IV.	<u>Orientation</u>	<u>Course Dates</u>	<u>Duration</u>	<u>Site</u>	<u>Number Participants</u>	<u>Cost Per Participant</u>	<u>TOTAL (\$000)</u>
A.	Nucleo Directors	Feb.82	3 days	Sucre Cbba.		50 mat. <u>50</u> 100 x 65 nucleos = 6.5	
B.	Rural Education Supervisors	Feb.82	"	"	25	10 <u>40</u> 50 =	1
C.	Departmental Admin. in Rural Education	Feb.82	"	"	10	10 =	.1
	SUB-TOTAL						<u>7.6</u>
V.	<u>Public Relations</u>			Cbba			
	Radio	on going		Sucre	Public	None-scripts provided by project; radio & TV cooperat.	-
	T.V.	Nov.81-85		La Paz		2 each x 96 issues	4.
	Newspapers - supplement for gen. public & 4th 5th grades	2/mo/83-85	4 yrs.	Sucre Cbba. La Paz	2,000/ issue		
	SUB-TOTAL						<u>4.0</u>
	TOTAL TRAINING COSTS						<u>1,108 1/</u>

1/ rounded to nearest dollar

EQUIPMENT, VEHICLES AND MATERIALS (LOAN)

	Item	Quantity	Unit Cost	Source of Supply			Total
				USA	041/935	Local	
I. Teacher Development							
Nucleo school technicians (65)	Motorbike	1/Technician	1,500		x		97,500
	Spare parts and helmet	1/Technician	200		x		13,000
	Sleeping bag	1/Technician	60	x			3,900
	Cooking supplies	1/Technician	40	x			2,600
	Sub-total			1,800			
II. School Equipment							
	Desks	286/Nucleo system	40			x	11,440
	Blackboards	30/Nucleo system	30			x	900
	Book Cabinet	30/Nucleo system	40			x	11,200
							13,540
							x 65
							880,700
III. Curriculum and Teaching Materials Development							
A. Regional Bilingual Education Office Production Center							
	Offset press	1	10,000	x			10,000
	Stapler machine	1	500	x			500
	Rotary Collating table	1	1,000	x			1,000
	Composition light table	1	1,000	x			1,000
	Table for folding	1	500	x			500
	Mimeograph	2	1,000	x			2,000
	Book trimmer	1	1,000	x			1,000
	Dolly mover	1	200	x			200
	Stencil burner	1	1,500	x			1,500
	Work table	4	500		x		2,000
	Shelves	5	300		x		1,500
	Desks/tables	11	250		x		2,750
	Chairs	30	50		x		1,500
	Typewriter, manual	4	500	x			2,000
	Typewriter, electric	2	1,500	x			3,000
							x 2
							60,900
B. National Department of Bilingual Education							
	Mimeograph	1	1,500	x			1,000
	Stencil burner	1	1,500	x			1,500
	Photocopier	1	2,000	x			2,000
	Typewriter, manual	4	500	x			2,000
	Typewriter, electric	3	1,500	x			4,500
	Shelves	5	250			x	1,250
	Desks/tables	14	250			x	3,500
	Chairs	20	50			x	1,000
	Work tables	2	500			x	1,000
Sub-total							17,750
C. Vehicles							
	4-wheel drive double cabin pick-up trucks	6	15,000	x			90,000
Sub-total							90,000
D. Teaching Materials							
	Textbooks	11,005/nucleo	1			x	11,005
	Teacher's guides	578/nucleo	1			x	578
	Supplementary materials					x	6,918
	General Supplies					x	4,200
							22,701
							x 65
							1,475,565
Total Equipment, Vehicles and Materials							2,641,915

SCHOOL EQUIPMENT

Calculations based on the assumption that schools already have some equipment, as compared to total enrollment.

	<u>Students</u>	<u>2-Child Desks</u>	<u>Cost</u>	<u>TOTAL</u>
Nucleo	172	86	40	3,440
Sectional (8)	50	25	40	<u>8,000</u>
				11,440
		<u>Blackboards</u>		
Nucleo		6	30	180
Sectional (8)		3	30	<u>720</u>
				900
		<u>Book Cabinets</u>		
Nucleo		6	40	240
Sectional (8)		3	40	<u>960</u>
				1,200
				<u>13,540</u>
TOTAL PER NUCLEO SYSTEM				<u>13,540</u>

MATERIALS COSTS FOR TEXTBOOKS: (Based on FENACRE data, Cochabamba)

Newsprint 77 cm. by 110 cm. = 600 pesos per ream

Bond (60 grm.) 67 cm. by 87 cm. = 668 pesos per ream

Cartulina 65 cm. by 100 cm (125 sheets) = 562.5 pesos

Aluminum plates (double sides) 64 cm. by 50.8 cm. = 122.5 pesos per sheet
 (prices not available on larger plates that are needed)

Paper	Size	Cost/ream	Cost Sheet	# Sheets /Book	Paper Cost	Plate Cost	Cover Cost	Book size	Cost Mat	Waste	TOTAL
News print	32" x 44"	\$ 24	4.8 cents	2.5	12 cents	1 c	5 c	80 pp	18 c	10%	19.8
Bond	26" x 34"	\$ 26.72	5.4 cents	2.5	13.5 c	1 c	5 c	80 pp	19.5 c	10%	21.5

These costs are for materials only at May, 1980 prices. As printing is phased in, add 15-20% per year for inflation. Cost estimates in PP are based upon \$1.00 per book, delivered prices, black and white.

TEXT BOOKS NEEDS - LOP

	No. of Titles ^{1/}	<u>1982</u>		<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>TOTAL</u> <u>LOP</u>		<u>COST/UNIT</u>		<u>COST/NUCLEO</u> <u>LOP</u>	
		<u>ST</u> ^{2/}	<u>Tchr Guide</u> ^{3/}	<u>ST.</u>	<u>T.G.</u>	<u>ST.</u>	<u>T.G.</u>	<u>ST.</u>	<u>T.G.</u>	<u>ST.</u>	<u>T.G.</u>	<u>ST.</u>	<u>T.G.</u>	<u>ST.</u>	<u>T.G.</u>
GRADE 1	5	255/nucleo	9.5	255/n	9.5	255/n	9.5	255/n	9.5	1,020	38	5	5	5,100	190
GRADE 2	5	-	9.5	230	9.5	230	9.5	230	9.5	690	38	5	5	3,450	190
GRADE 3	5	-	9		9	205	9	205	9	410	36	5	5	2,050	180
GRADE 4 + 5	News sheet	75	4	75	4	75	4	180	6	<u>405</u>	<u>18</u>	1	1	<u>405</u>	<u>18</u>
										2,525	130			11,005	578
														578	
														11,583	Total cost per nucleo

1/ One title in each column represents the cost of supplementary materials, such as worksheets, pamphlets, enrichment materials, etc.

2/ Based on grade sectors, not number of teachers

3/ Number of students is based on current first grade enrollments with 10% dropout per grade in successive grades.

SUPPLEMENTARY TEACHING MATERIALS* - LOP

		<u>Initial</u>		<u>Replacement</u> (20%)	<u>Total Nucleo</u>
	STS	Cost/St	Cost		
Pre-Básico	50	5	250	50	300
Grade 1	255	5	1275	245	1520
Grade 2	230	7.50	1725	335	2060
Grade 3	205	8	1640	318	1958
Grades 4 & 5	180	5	900	180	<u>1080</u>

6918 per nucleo LOP

*/ Flannelgraphs, cuisenaire rods, etc.

GENERAL SCHOOL SUPPLIES*

Sectional	\$400/school x 8	3200
Nucleo	1000/school	<u>1000</u>

4200 per nucleo LOP

*/ First aid supplies, hygienic supplies, recreational equipment, janitorial supplies.

TECHNICAL ASSISTANCE COSTS
 (\$000) Grant

<u>Title and Position</u>	<u>Dates</u>	<u>W/M</u>	<u>Location</u>	<u>Amount</u>
1. Teacher Development - Teacher Training Advisor	May 81 - Sept. 85	54	La Paz, with travel to Sucre and Cochabamba	\$2,500 LOP
2. Curriculum and Teaching Materials Development - Curriculum and Teaching Materials Development Advisor	May, 81 - Sept. 85	54	"	
- Materials Production Specialist	May, 81 - Sept. 85	54	"	
3. Research and Evaluations - Research/Evaluation Adv.	May, 81 - Sept. 85	54	"	
- Bilingual Education Adv. (Chief of Party)	Apr. 81 - Sept. 85	54	"	

GOB PERSONNEL AND OPERATING EXPENSES

A. <u>Personnel</u>	<u>Position</u>	<u>Number</u>	<u>Mo. Salary</u>	<u>Annual Salary 1/</u>	<u>Years</u>	<u>TOTAL</u>
1. National Department of Bilingual Education	Director	1	700	11,200	5	56,000
	Curriculum Specialists	8	500	8,000	5	320,000
	Planner	1	500	8,000	4.5	36,000
	Admin. Assist.	1	400	6,400	4.5	28,800
	Procurement	1	400	6,400	4.5	28,800
	Secretary	1	300	4,800	5.	24,000
	Secretary	2	300	4,800	4.5	43,200
	Driver	1	250	4,000	4.5	18,000
	SUBTOTAL					
2. Departmental Center for Bilingual Education	Teacher training Specialists					
	- Chief	1	600	9,600	5	48,000
	- Others	6	500	8,000	5	240,000
	Driver	3	250	4,000	4.5	54,000
	Mechanic	1	400	6,400	4.5	28,800
	Printing tech.	1	500	8,000	4.5	36,000
	Printing Asst.	2	250	4,000	4.5	36,000
	School equip. supervisor	1	500	8,000	4.5	36,000
	Accountant	1	500	8,000	5	37,500
	Secretary	1	300	4,800	4.5	93,200
	SUBTOTAL					
						x 2
3. Nucleo System Tech.	Teacher	65	100	1,600	5	1,119,000
	SUBTOTAL					
TOTAL PERSONNEL EXPENSES						2,193,000

B. Operating Expenses

1. Offices

- La Paz	1,000	12,000	5	60,000
- Cochabamba	500	6,000	5	30,000
- Sucre	500	6,000	5	<u>30,000</u>

SUBTOTAL

120,000

2. Materials Production Unit

- Cochabamba	500	6,000	5	30,000
- Sucre	500	6,000	5	<u>30,000</u>

SUBTOTAL

60,000

TOTAL OPERATING EXPENSES

180,000

TOTAL PERSONNEL AND OPERATING EXPENSES

2,373,800

INFLATION

236,100

CONTINGENCY

90,100

TOTAL GOB CONTRIBUTION

2,700,000

1/ Includes 4 bonus payments equivalent to one month's salary each.

CHARACTERISTICS OF THE FULL BILINGUAL EDUCATION MODEL

The full bilingual education model focuses on literacy reading instruction, Spanish language acquisition, subject matter delivery and transfer of reading skills. In addition, certain supportive conditions must be satisfied in order to achieve any degree of success. There follows a discussion of each component:

1. Literacy Reading Instruction

The reading instructional component consists of the following:

a. A pre-reading (apresto) and Quechua oral language section which precedes the actual introduction of decoding skills.

b. Reading materials in which vocabulary and syntax are tightly controlled. This is especially important because of the regional variation of Quechua. This will be accomplished by an extensive field review of the materials. Additionally, the materials will be reviewed for cultural and social factors. Beginning reading materials will not present concepts (other than specific literacy skills) which are unfamiliar or unnatural to rural students.

c. Well printed materials with art work or preferably photographs of natural country scenes. Stick drawings and anthropomorphisms are avoided.

d. A variety of supportive reading materials besides the basal readers will be provided to help students achieve and maintain literacy. Both fiction and non-fiction booklets covering a wide range of children's literature appropriate for rural students will form the basis for a small school library.

2. Spanish Language Acquisition

Development of a curriculum for Spanish as a second language will be based on the following hypotheses: *

a. Students, especially pre-adolescents best gain higher levels of second language proficiency through informal (unstructured) opportunities rather than through formal (structured) sessions. Structured instruction leads to language "learning" or knowing about the language rather than language acquisition which leads to ability

* (Source: Adapted from Krashen, Stephen, "A Response to McLaughlin-The Monitor Model: Some Methodological Considerations", Language Learning, v.29, n.1, 1979)

to use the language as a medium of communication-- often at levels approximating a native speaker.

b. Language is not necessarily experienced in a grammatically predictable order; nevertheless, it appears that adults, at least, acquire grammar in a certain order. This probably is not as important in language acquisition among pre-adolescents.

c. Older children acquire language more quickly than younger children. Pre-adolescents eventually gain higher levels of native-like proficiency than most adults.

d. Second languages are acquired when the input language is comprehensible. This means, for example, that if social studies were used as a natural second language acquisition opportunity for a group made up entirely of second language learners, then the input language (with the aid of context or extralinguistic information) must be understandable at the level of the student. To promote additional acquisition, each opportunity should contain some language just beyond the student. If the student is a level (i) then input language should be at level (i+1) using the context and extralinguistic information to assure understanding.

e. Attitude and motivation affect second language acquisition. The sociolinguistic ambience, learning-teaching situation, and student personality characteristics all affect the eventual attainment in acquiring the second language.

f. The level of first language ability and general educational potential are indicators of eventual attainment in the second language.

Support materials have a very important role in second language acquisition. In particular, materials will be designed which encourage language acquisition by being (a) comprehensible, (b) interesting and relevant, (c) available in sufficient quantity, and (d) not grammatically sequenced.

Other factors that will be taken into consideration in materials design include:

- heavy emphasis on contrastive analysis (i.e., phonology) and translation is to be avoided since it is not needed for pre-adolescent students.

- the use of standard approaches in the audio-lingual methodology, such as audio-motor response (Asher), choral repetition, pattern drills, and dialogues (Finocchiaro).

- Providing students with daily opportunities for natural language acquisition built around language functions, for example, social studies classes.

- Providing students with opportunities for gaining communicative competence, such as recreation.

3. Subject Matter Delivery

The project will decide which subjects are to be taught in the home language and which are to be taught through a natural language acquisition approach in the second language. Subject areas in the basic skills (such as math) are usually best taught in the native language while the second language can be used for social studies or even natural science lessons. Code switching, concurrent methods, or any other type of consistent language mixing will be avoided. The project will investigate the possibilities of utilizing one or a variety of the recognized bilingual delivery approaches such as: (1) language dominant grouping; (2) preview-review; or (3) alternate language approach.

During training sessions, teachers will be made aware of the amount of Spanish loan words they use when speaking Quechua in an effort to reduce this practice as much as possible. Unnatural or unnecessary borrowing impedes communication.

Training also will focus on helping teachers to know how to handle language varieties in the classroom. Training in this regard will be particularly important since students and teachers in various regions may speak a variety of Quechua different from that represented in the materials.

4. Transfer of Reading Skills

Reading skills gained in Quechua will transfer to Spanish. The following table identifies the various reading skills and the degree to which transfer from one language to another can be expected. An important element of the model which must be kept in mind is that Quechua-speaking students will not be formally introduced to Spanish reading until the majority of the skills listed in the table have been mastered.

QUECHUA - SPANISH

READING SKILLS TRANSFERABILITY CHART

READINESS SKILLS	TRANSFERABILITY
Visual Discrimination	
Position	Total
Size and shape	Total
Relationship between capitals and small letters	Total
Auditory Discrimination	
Recognition of initial sound	Total
Cognitive Development	
Identifying scenes and characters in pictures	Total
Establishing sequences of story through pictures	Total
Finding details in pictures	Total
Retelling orally a story read by the teacher	Total

READING SKILLS

TRANSFERABILITY

DECODING SKILLS

Vowel sounds	Partial
Consonant sounds	Very great

COMPREHENSION SKILLS

Literal comprehension	
Vocabulary per se	Null to limited e.g., certain cognates and loan words
Finding contextual clues to determine meaning	Total
Determining what, who, when, where, how, why	Total
Understanding the concepts of synonyms	Total
Understanding the concepts of homonyms	Total
Understanding use of humor, irony, sarcasm	Total
Developing abilities of finding details	Total
Establishing sequence	Total
Establishing contrast and comparison	Total
Identifying characters and understanding their personality, their motivations, etc.	Total
Analyzing feelings	Total
Recognizing meaning of punctuation	Total
Inferential skills	
Establishing cause effect relationship	Total
Determining author's motivation and/or purpose	Total
Identifying absurdities, misrepresentations or misconceptions	Total
Identifying bias and/or prejudice	Total
Anticipating results	Total

CRITICAL READING SKILLS

Validation of content against previous experience or previously known information	Total
Identifying bias and/or prejudice in the author	Total
Determining author's perspective	Total
Determining possible effect of text on readers	Total
Determining personal implications for future actions	Total

In order to implement the full bilingual education program as described in this Annex, the following supportive conditions will be satisfied:

1. **Parents and community:** The parents and community will be informed about the intent and content of the bilingual education program. Without the active support or at least consent of the community, it is unlikely that the program will be successful. Special orientation sessions with the parents and community must be held initially and at periodic intervals to gain and maintain community support by the nucleo level technician.
2. **Teaching Personnel:** Teachers must be bilingual and bicultural and understand the problems of education in rural Bolivia. They must be in agreement with and supportive of the bilingual education philosophy. To assure that such teachers are in place, they must receive training in (a) bilingual education theory, (b) general principals of schooling in a bilingual setting, (c) bilingual class room management, (d) methods and techniques for teaching Quechua reading and language arts, and (e) methods and techniques in second language acquisition.
3. **Materials:** The program will develop student materials for a complete basal course in Quechua reading and language arts. In addition, for each subject area in which Quechua is used as a medium of instruction, materials will be developed. A substantial quantity of Quechua reading materials such as stories, poems, topics of interest in health, agriculture etc. will be needed to achieve and maintain functional literacy. It is absolutely necessary for each school to develop these into a library of Quechua and Spanish reading materials. In Spanish, Spanish-as-a-second language readers will be developed for at least the third grade. Additional Spanish reading material will also be developed. If Spanish is used as a medium of instruction in social studies, art or music to provide Quechua-speakers with informal second language acquisition opportunities, special materials will be prepared.

Teachers will be provided with guides, manuals and instructional booklets for the different subject areas they teach.

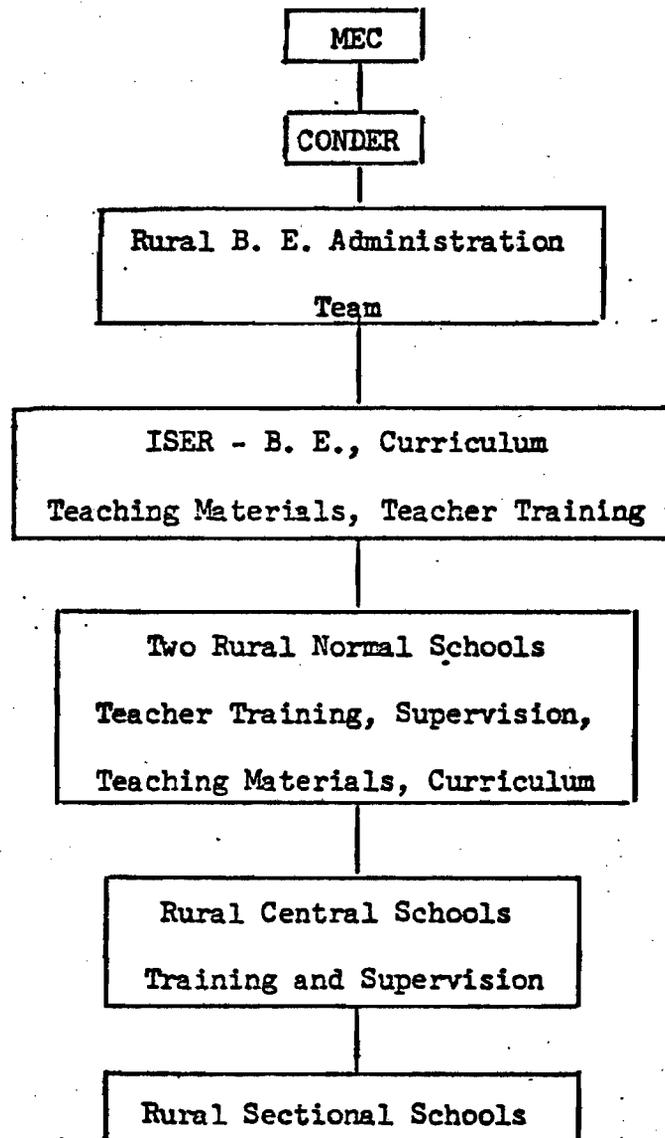
Other Considerations

One of the major problems in rural Bolivian education is that most students drop out of school around the third grade. To increase the amount of time of exposure in the school and thus improved academic

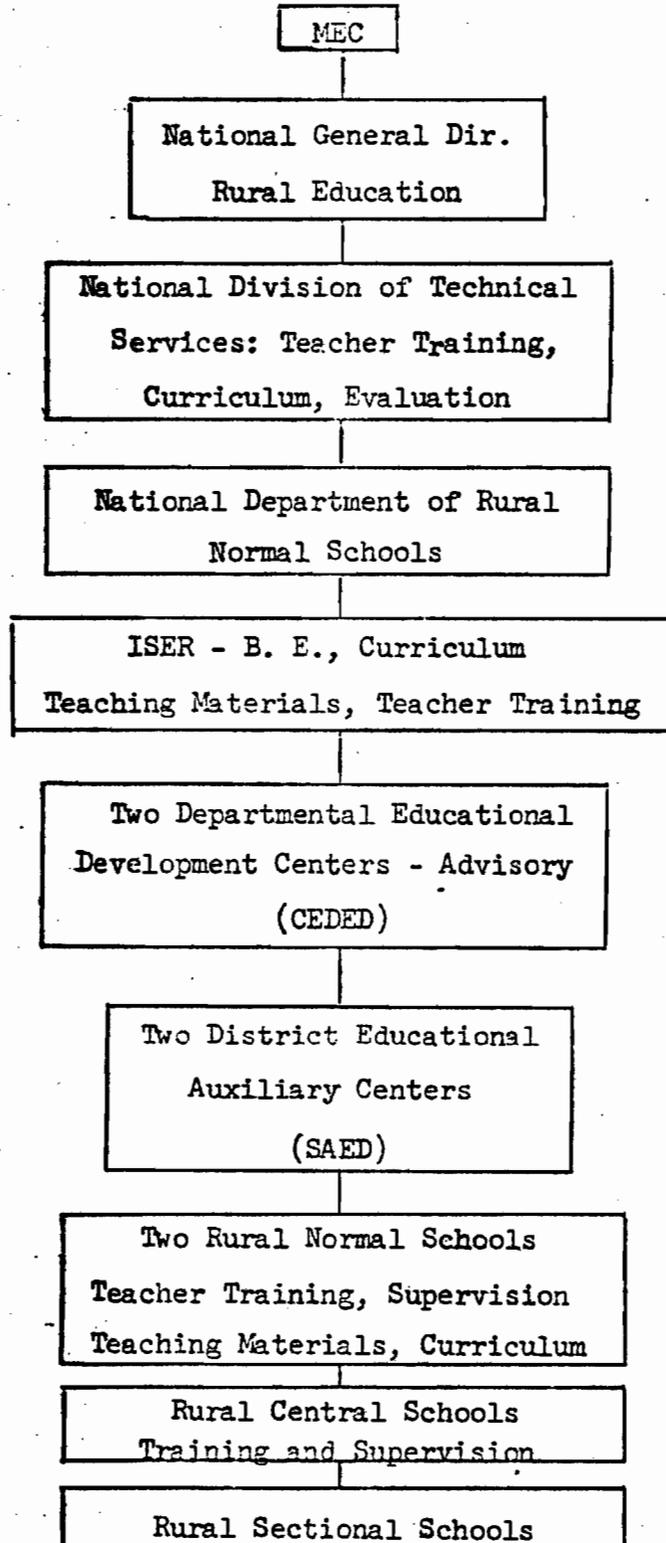
achievement and increased retention, the bilingual education program will include the pre-school course in the program. Additionally, whenever possible, Educación Inicial programs, such as those sponsored by UNICEF, by including the promoters in the training at the nucleos, will be promoted by the project. Parent education will include activities which enable them to understand and assist their children in the learning process.

ALTERNATIVES FOR INSTITUTIONAL LOCATION

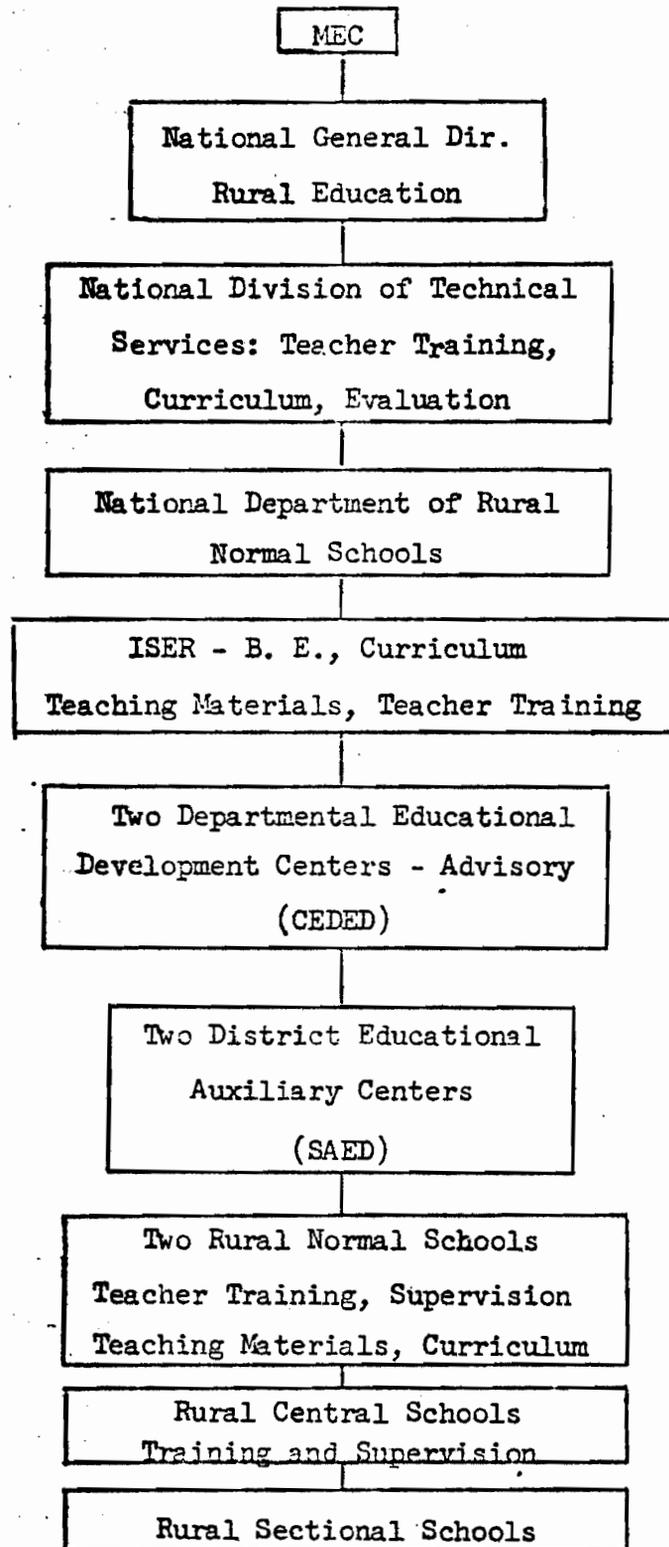
Alternative One



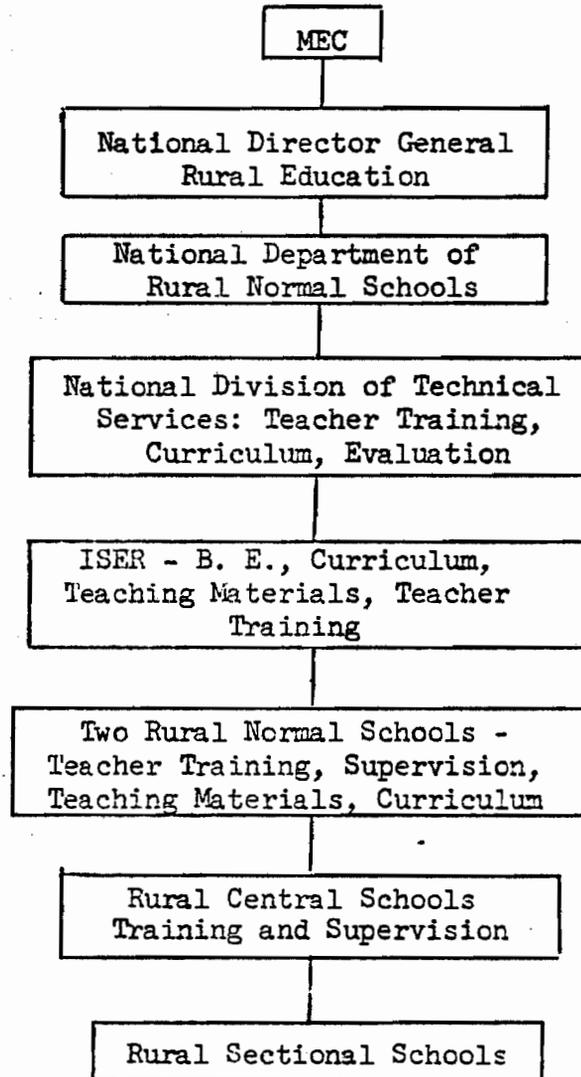
Alternative Two



Alternative Two



Alternative Three



Training and Education for Specialists,
Technicians, Teachers, Administrators, and Public

The Bilingual Education Project contemplates training and education on five levels. Those directly involved in carrying out the project, such as specialists, technicians, and teachers, must be trained in their duties. Those less directly involved, such as administrators, parents, community leaders, and general public, must be educated about bilingual education to gain their understanding and support. The types and scheduling of training and education is discussed in Section II.B. In this Annex, the content and outcome of each is outlined.

LEVEL I - Specialists

- Content:
- Materials preparation for reading.
 - Material preparation for second language learning.
 - Methods of teaching Spanish as a second language (oral skills and reading).
 - Methods of teaching reading in Quechua.
 - Bilingual classroom management.
 - Observation of ongoing successful programs.
 - Training of technical personnel (Rural Normal School Teachers, Technicians for Nuclear Schools).
 - Development of materials and curriculum for the technical personnel.
 - Development of specific guides for use of technical people working with rural Bilingual Education school teachers in the nucleos.
 - Development of a large variety of materials for teaching in Quechua.
 - Methods of writing for children.
 - Planning for action on the part of each group of trainees.
 - Attaining and maintaining good personal and professional relationships.

Outcomes: 14 trainees in Bilingual Education Teacher Training

- Ability to plan and carry out the training of the technicians who will attend to the training of teachers in each nucleo.
- Ability to evaluate their own teaching (where there has been no learning - there has been no teaching).

- Outcomes:
- Ability to evaluate their students work and devise positive methods to help them improve.
 - Belief in the ability of Bilingual Education to help solve some of the campesino problems.
 - Ability and willingness to explain and communicate his belief.
 - A specific guide for teacher training.
 - Ability to work together toward a common goal.

8 trainees in Bilingual Education Curriculum and Materials Preparation

- Ability to write a graded series of Quechua readers which are interesting to adults as well as children, vocabulary adjusted to socio-linguistic ability of the learner, culturally relevant, well illustrated, inexpensive to produce.
- Ability to design a large variety of student worksheet materials related to reader content.
- Ability to interpret curriculum content to produce a selection of materials in Quechua (math, social studies, health, mythology, nature studies, etc.) plus student worksheet materials to accompany.
- Ability to produce materials for learning oral skills in Spanish, and the simple reading materials for 3rd, 4th, and 5th grades.
- Ability to teach the technicians the use of all these materials in an integrated, useful way.
- Ability to work together toward a common goal.

3 ISE/T Trainees in Rural Normal School Teacher Preparation

- Ability to plan and carry out the orientation of all the teachers of the normal schools and the Instituto Superior de Educación Rural.
- Ability to train all the methods teachers in the RNS Vacas and Villa Serrano.

- Ability to plan, train and supervise the teachers in a demonstration school in which Quechua is the mother tongue.
- Ability to develop and produce relevant training materials and methods for ISE/T and the Bilingual Education professors at the RNS.
- Ability to develop text materials for the ISE/T pre-service training for Bilingual Teacher in R.N.S.
- Specific guide for training teacher educators.
- Specific guide for training normalistas.
- Ability to attain and maintain good human relations.

LEVEL II - Technicians

- Content:
- Philosophy of Bilingual Education.
 - Theory of second language acquisition.
 - Relationship between first and second language acquisition.
 - Methods of teaching reading in Quechua.
 - Handling of varieties of Quechua in classroom teaching.
 - Methods of teaching other classroom activities in Quechua (math, social studies, etc.).
 - Materials use and care.
 - Methods of teaching Spanish as a second language (oral skills and reading).
 - Use of specific guide developed by training specialists.
 - Supervision of teaching and classroom management.
 - Teaching a multi-grade classroom.
 - Orientation of teachers and community members.
 - Care and maintenance of motorbike.
 - School, parent and community relationships.

Outcomes: Technicians (1 per nucleo) will have the ability to:

- Orient all teachers in the nucleo to Bilingual Education.
- Orient each community, leaders and members, in the reality of Bilingual Education.
- Train in depth the teachers of first, second and third grades.
- Demonstrate effectively the use of reading materials.
- Supervise classroom teaching.
- Follow the specific guide for teacher training.
- Use preventive maintenance and effect minor repairs on motorbike.

LEVEL II - Rural Normal School Instructors

- Content:
- Philosophy of Bilingual Education.
 - Theory of second language acquisition.
 - Relationship between first and second language acquisition.
 - Demonstration of methods and materials.
 - The effect of Bilingual Education on all courses taught in normal school.

The teachers who are concerned with methods of teaching in rural classrooms will remain for a further 10 days of in depth instruction and practice in the new methods of Bilingual Education. They will learn to follow the Specific Guide for Training Normalistas.

- Outcomes:
- An understanding of Bilingual Education as it affects all teachers in Normal Schools.
 - New techniques in teaching, new methodology and new materials will change the character of methods courses in Rural Normal Schools.
 - Use of Specific Guide for Normalistas developed by ISER professors.

LEVEL III - Teachers

- Content:
- Philosophy of Bilingual Education.
 - Theory of second language acquisition.
 - Relationship between first and second language acquisition.
 - Methods and techniques of teaching reading in Quechua.
 - Methods of teaching other classroom activities in Quechua.
 - Materials use and care.
 - Methods and techniques of teaching Spanish as a second language.
 - Ways of orienting community leaders and members.

- Outcomes:
- Teachers who feel secure in their ability to teach children to read Quechua.
 - Teachers who can use teaching materials to further learning.
 - Teachers who understand the need to teach in a known language for any real learning to take place.
 - Understanding of second language acquisition.

LEVEL IV - Administrators

- 65 Directors of chosen nuclear schools.
- 25 Rural Education Supervisors of the Departmental Office of Rural Education
- 10 Administrative Personnel of Departmental Office of Rural Education.

Content:

- Simple philosophical concepts of Bilingual Education, theory of second language learning, exposure to Bilingual Education materials, and expectations for Bilingual Education in Bolivia.
- Ways of communicating their understandings to community, groups.

Outcomes: - Understanding and support for project.

LEVEL V - Public

Content: A radio, newspaper and television campaign to communicate the meaning of bilingual education:

- All messages to be disseminated in two languages.
- All messages to be brief, concise and to the point, without running narratives or discussions.
- Each message to be carefully prepared, discussed, revised and discussed again prior to its release to the media.
- Each message to be interesting and direct.
- The educational impact to depend solely upon good content and repetition.
- Each message should avoid ambiguities, and each should be screened against the others to avoid contradictions.
- Each message to provide identical content in each of the two languages, with no message appealing to "local color" or cultural idiosyncrasies that might provoke accusations of "brainwashing" or "cultural fraud".

Outcomes:

- An informed public.
- An interested public.
- An understanding public

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Outcomes:

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Communities in which Bilingual Education project
schools will be located.

- Content:**
- A thorough explanation of Bilingual Education and its hopes for a literate population.
 - Some simple demonstration.
 - Ways parents can assist in the education of their children.
- Outcomes:**
- An understanding and accepting attitude on the part of local communities.
 - Successful education in Quechua and Spanish.

CURRICULUM DEVELOPMENT

The success of the full bilingual model, in large part, will depend on how well the curriculum is adapted to the model's requirements, particularly with respect to initial emphasis on developing competence in the home language prior to beginning intensive training in second language skills. In this regard, home language competence is best achieved when the curriculum and related materials are designed with the environment in which they are to be applied in mind.

The primary emphasis in curriculum development will be on the first three primary grades. However, an important aspect of the full bilingual education model is the maintenance of home language skills by continuing with certain activities in the home language after the third grade. Therefore, while the project will not focus on the fourth and fifth grades (the last grades of primary school) some work will be done with these grades -- particularly in teacher training and the application of curriculum. In much the same manner, pre-school also will receive some attention in curriculum development although most of the effort at this level will be directed at teacher training.

Finally, curriculum development will take into account the language proficiencies of the students to the extent practicable. A summary table on the relationship between proficiency and the curriculum which should be offered is provided at the end of this Annex.

First Year Curriculum

1. Cultural enrichment activities through introduction of objects, pictures of objects, fundamental science and hygienic concepts, choral recitation, games and supervised play. Some, but not all, of these activities will involve an organized approach to the teaching of oral Spanish as a second language.
2. Introduction of basic reading in Quechua through "experience charts", flash cards, flannel boards, classroom object identification, name and personal property association and pre-reading paper-and-pencil exercises requiring 'matching', identification of special relationships, likenesses, differences, opposites, etc. During the second month of the school year, formal reading in Quechua will be introduced with a Primer, to be followed upon completion by two first grade readers of "controlled vocabulary".

3. Introduction of basic number concepts, such as counting, grouping one-to-one relationships, etc. During the last half of the year, the basic number processes of addition; subtraction, multiplication and division will be introduced through object manipulation and student work sheets, but no formal mathematics text will be developed or used in the first grade.

4. Spanish as a second language will be an organized, on-going activity throughout each day, but all curricula will be oral, utilizing songs, poems, choral "readings", identification techniques, games and supervised play. Spanish reading will not be introduced during the first year.

5. Instructional policies and teaching techniques will accommodate any monolingual Spanish speaking pupils, but during the first year it is unlikely that any special equipment or Spanish language materials will be required with the possible exception of formal reading exercises during the last half.

6. Manuscript writing will be introduced through simple exercises, with the level of difficulty gradually increasing to coincide with the increasing maturity of the learners. By the end of the year, each child should be capable of writing his name, the days of the week and the months of the year, but first-year writing should concentrate upon the development of coordination and the habits of neatness and legibility. All writing activities will be in Quechua.

7. Beginning with the second half of the first year, Daily Work Sheets will be distributed to, and completed by each child. Consisting of an illustration, simple reading matter and some writing or "identification" exercise, these worksheets will be printed on inexpensive paper, and will remain the property of the child once the work has been evaluated and recorded by the teacher. Children will be encouraged to take the sheets home, to be shared by other members of their families.

Second Year Curriculum

1. In the basic subjects of reading, math, science and social studies, the curriculum specialists of the National Department of Bilingual Education, will prepare "scope and sequence charts", from which the subject matter specialists in the Department will prepare manuscripts and prototype texts. Copies of these manuscripts will be sent to the Departmental Centers for Bilingual Education in Sucre and

Cochabamba. The materials production component at the Departmental Centers will produce the plates and print the books in sufficient quantities to provide a copy for each second grade child, and an adequate number of "teacher guide books" for each second grade teacher in the program. The successful Quechua language teaching materials developed by the bilingual component of Rural Education I will be reproduced and used as a part of the required materials.

2. Cultural enrichment activities will continue in the second grade, but at a somewhat more sophisticated level than those provided in the previous year. During the last half of the second grade, small inexpensive pamphlets, or booklets, will be issued from time to time to become a part of the "enrichment" program. Dealing with subjects such as animals, science, agriculture, health, family life, hygiene, myths, adventures, etc. the booklets, written and produced by the curriculum specialists at the Departmental Bilingual Education centers, will become the property of each child as soon as they have been used in the classrooms and are no longer needed as current curriculum content.

3. A formal oral curriculum will be outlined for use in the teaching of Spanish as a second language. No Spanish language reading will be required during second grade with the exception of that used in the teaching of mono-lingual Spanish speaking children, who will be grouped apart for this portion of their daily schedule.

4. Daily work sheets, similar to, but at a higher level of difficulty than the first grade sheets, will be a part of the second grade program. As in the first grade, these sheets will be taken home after the teacher has evaluated and recorded the work.

Third Year Curriculum

1. Texts for the basic subjects will be developed by the National Department for Bilingual Education then produced and distributed by the Departmental Centers for Bilingual Education in Sucre and Cochabamba. Scope and sequence in each subject will closely parallel the official curriculum prescribed for all Bolivian Spanish speaking schools, but the bilingual education program will continue to use Quechua materials throughout the third grade.

2. Enrichment programs, worksheets and special-subject pamphlets will continue to be used throughout the third grade program. Special provisions will continue to be made to accommodate mono-lingual

Spanish speaking children, and "Spanish as a second language" will be taught throughout the year.

3. As in previous grades, only formal text materials in the basic subjects will be selected by, or developed by the National Department of Bilingual Education, while all other printed curricular materials will be procured or developed by the Departmental Centers. Many supplementary materials will be made by teachers and supervisors at the individual school level. For economy of time and effort and to guard against redundancies in materials, the Departmental Centers will exchange and share worksheets and pamphlet manuscripts developed for use at each of the two centers. Some materials, however, of a highly provincial nature may be of value only to the area or Department for which it was developed.

4. Special materials will be developed by the Departmental Centers to increase the facility of third grade students to read and comprehend the Spanish language.

Student Placement

While almost all of the students participating in the project will be more proficient in Quechua than in Spanish, to the extent possible the project will provide each student with a proper program based on the student's language proficiencies. The following table shows the probable structure the curriculum would take depending on language proficiency levels.

<u>Student Classification</u>	<u>Curriculum Offering</u>
No or limited proficiency in Spanish and proficiency in native language.	Spanish as a second language and native language instruction.
Proficiency in both native language and Spanish.	Native language instruction as well as Spanish as a native language.
Spanish proficiency and no or limited proficiency in Quechua or Aymara.	Native Spanish language instruction and Quechua as a second language (optional).
Limited Spanish proficiency and no or limited native proficiency.	On of the above curriculum sets based on observation of language usage of the student.

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MATERIALS PRODUCTION

Materials such as worksheets, pamphlets and textbooks are an important mechanism for the delivery of curriculum to students. As with curriculum, materials must be developed and produced which are consistent with the environment in which they will be used. The following guidelines for materials production and distribution have been developed specifically so that the project will maintain this consistency.

General Guidelines

- Materials should be inexpensive and expendable, as the conditions under which they are to be used dictate against "recycling" any but the best, the most durable and most expensive for a second year of use.

- Large quantities of student worksheet materials should be used, with separate "guide" materials for the teachers.

- Drawings, text and workspace should be combined on the same sheet, and these one-page work units, in groups of 20-25, should be gathered with a single staple to facilitate "peeling off" each day's assignment after it has been finished, for room display or for sending home with the children. Print (mimeograph) on both sides.

- Essentially sequential work patterns (stories, historical accounts, botanical growth sequences) should be made of cheap, expendable materials but bound more securely by "saddle stitch" (staple) operation. Except in unavoidable cases, these items should not exceed 32 pages (8 pages of letter size or legal size cheap paper, printed as two-page "signatures" on both sides and finally saddle stitched together in the middle.

- Whenever possible, each worksheet should serve four purposes: (1) logical curriculum sequence; (2) reading for student; (3) visual aid to meaning (drawings) and (4) workspace for the child.

- Teacher guide materials should include suggestions for the adaptation (of mass-produced children's material) to the language patterns and possible variations of a local dialect.

- Color is important, but a massive educational undertaking with a limited budget dictates against any significant use of color

and especially of the very expensive techniques of four-color process.

- Good education depends upon great quantities of good materials, but the quality of the content is much more important than the quality of the physical product.

- Textbooks that have too many pages to accommodate the saddle stitching process, should be let out on "bid" and printed by private printers in Sucre and Cochabamba.

- To assure good work flow, a Materials Production Specialist should draw up the shop layout before machines and equipment are installed at the Departmental production centers.

Materials Production and Distribution Plan

The project will develop its own facilities for producing the materials needed in the rural nucleos. The rural nucleo school system participating in the program will be scattered over difficult and hazardous terrain. Since the distribution process will be improved in direct proportion to the number and dispersion of the production centers, a materials development, production and distribution center will be established in each of the two departments participating in the program. Other guidelines include:

- Production equipment and machines are to be kept at the simplest level possible, with all runs of less than 1,000 copies being produced on mimeograph or similar type equipment. One small offset machine will be provided at each departmental center.

- Sets of materials will be delivered from the production centers to the nucleo central schools. The nucleo director and bilingual education technician, in turn, will redistribute the materials to the sectional schools on the basis of need and number of student enrolled.

- The project will solicit the collaboration of the community leaders in helping to construct simple and safe storage cabinets at each school to safeguard materials delivered to the site.

- Up to three four - wheel drive double cabin pick-up trucks will be made available at each production site to provide transportation for deliveries or official visits to the rural schools.

- Teacher training materials will be produced at the departmental centers and distributed at seminars, workshops and in-service training courses.

- No teacher training materials will be distributed except in conjunction with the orientation or training activity that is necessary to assure proper utilization.

- The Materials Production advisor will visit each production site at least once each month to check all equipment for condition and maintenance; review materials (incoming) delivery procedures; examine storage facility and safety conditions re: materials, and provide advice, training and orientation programs for the local operation personnel.

Sequence and Process for Manuscript Development

- Materials needed for the training of all 25 Bilingual Education Specialists at "Level I" will be developed by the Technical Assistance Team.

- Manuscripts, including lay-out and design, for all ISE materials will be developed by bilingual education specialists at ISET. They will be assisted by the technical assistance team.

- Manuscripts, including lay-out and design, for all rural normal school materials will be developed by "Vacas" and "Villa Serrano" Rural Normal School, bilingual education instructors assisted by ISET specialists, and the technical assistance team.

- Manuscripts, including lay-out and design, for all rural school textbooks (first three grades) will be developed by the National Curriculum Center for Bilingual Education- a highly trained technical component of the National Department of Bilingual Education. This National Curriculum team will be advised by the technical assistance team.

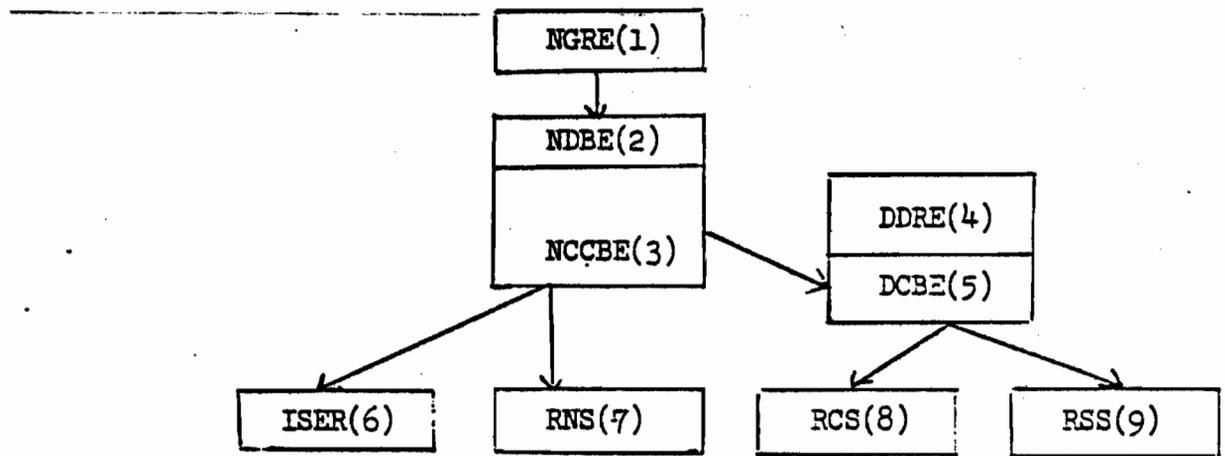
- Manuscript examples, sample copies, mock-ups, and other items sent to the production technicians for processing and printing as supplementary materials (pamphlets, booklets, worksheets, charts, etc.) for use in the nucleo central and sectional schools, will be developed by the Departmental Centers for Bilingual Education located in Cochabamba and Sucre. Assistance will be made available from the technical assistance team, by ISET and the rural normal school bilingual specialists.

- Teacher-made curriculum materials (charts, illustrations, counters, simple science materials, etc.) will be produced at the individual schools - with assistance from the nucleo school system technician.

All bilingual education curriculum and materials development activities throughout the country will be coordinated under the auspices of the National Director of Bilingual Education.

BILINGUAL EDUCATION PROJECT

CURRICULUM DEVELOPMENT - MATERIALS PRODUCTION



- (1) National Director General for Rural Education.
- (2) National Division of Bilingual Education.
- (3) National Curriculum Center for Bilingual Education.
- (4) Departmental Director of Rural Education.
- (5) Departmental Center for Bilingual Education.
- (6) Instituto Superior de Educación Rural (Tarija).
- (7) Rural Normal Schools.
- (8) Rural Central Schools (núcleos).
- (9) Rural Sectional Schools (nuclear satellites).

Resource Materials Libraries

The Curriculum and the Bilingual Education advisors, working as a team, will collaborate with designated specialists from the National Department of Bilingual Education and Departmental Bilingual Education Centers in the development of Resource Materials Libraries. Duplicate copies of all materials will be located at: the National Department of Bilingual Education; ISE/T, and each of the participating Departmental Bilingual Education Centers and Rural Normal Schools. These libraries will be particularly useful to the staffs and students of normal schools, and to all bilingual education teachers and administrators throughout Bolivia.

An effort will be made to collect other materials related to language and bilingual education from Bolivian institutes such as the Maryknoll Language Institute in Cochabamba for placement in these libraries. A reference list of suggested entities is in the Bilingual Education Project Design Report.

SPECIAL RESEARCH STUDIES

As part of the overall research and evaluation component of the project, one of the technical advisors will have responsibility for supervising all activities in this area.

In addition to the evaluation process of designing a plan, identifying important variables, data collection and data analysis (see Annex II, Exhibit J, for a discussion of these activities), the project includes four special research studies which will provide important information for the development of curriculum and materials which are adapted to the requirements of the target population. The studies to be undertaken are:

1. A study of the varieties of Quechua spoken in Bolivia and the implications of such variations in the implementation of bilingual education programs.

Research time: 6 months

Staff Needed: One consultant full time and two assistants

Application: To be used in the preparation of Quechua materials, classroom strategies, and in-teacher training.

2. A study of the antecedent conditions (pre-project conditions) in rural school communities in the Quechua-speaking regions of Cochabamba and Chuquisaca.

Research Time: 3-5 months

Staff Needed: Researcher/Evaluator and two assistants

Application: To be used as the baseline data for the project evaluation and as information for the selection of school sites. This information will also assist project staff in the design of program strategies and to make program improvements.

3. A study of the acquisition of syntax by native Spanish and Quechua speaking children between the ages of 5 and 12.

Research time: 4-5 months

Staff Needed: 1 consultant full-time (4-5 months) plus 2-3 persons part-time for data collection.

Application: _____ To be used in preparation of Spanish as a
_____ ~~second~~-language and Quechua materials so
as to make them more like the Spanish
and Quechua of children that age.

4. This study is designed to process and analyze sociolinguistic data from a study administered to heads of households concerning their language knowledge and use. Although the data were collected as part of the Education Management Project (511-V-051) it has not been processed. To process the data it will be necessary to develop a code for the questionnaire and program used to generate cross-tabs. The results of this study will be compared with the sociolinguistic analysis of the 1976 Census which is currently in process.

**Research time to
code and analyze:** 3 months

Staff Needed: 2 coders
1 programmer
1 full-time consultant

Application: Will provide limited but useful detailed information on language acquisition, usage, and attitude patterns which can aid in the development of the type of bilingual program to be implemented in an area, particularly vis-a-vis second language training.

EVALUATION PLAN

The specialist in evaluation/research will oversee the evaluation plan for the life of the project. During the last several months of the project, a three-person evaluation team will be brought in to develop the final evaluation report under the supervision of the research/evaluation specialist.

Evaluation procedures for 1981 will focus upon context evaluation and other procedures, such as: (1) setting up overall evaluation design (see below), and (2) identifying antecedent conditions at the regional school sites in Sucre, the control group sites, and reporting the current conditions at the pilot project sites in Cochabamba. Procedure (2) above must be completed before any program treatment is given to students in schools in the Sucre region. Also in order to control for the factor of additional school equipment desks and blackboards should also be supplied to control group schools. Finally, the evaluation unit should follow up our drop-outs to determine the causes of school leaving.

Beginning in 1982, the Evaluator/Researcher will begin providing process evaluation information to the major target group audiences such as USAID, MEC, project staff, school staff, and parents and community members. Since the project will still be in the initial stages of development, it would be inappropriate to collect and report product evaluation information at this time. Instead, process evaluation information should be used by target audiences to make decisions leading to project improvements. In keeping with this idea, at the completion of 1982, a two-person evaluation team of bilingual education specialists will be contracted to review the project, report their findings, and make suggestions for program improvement.

During 1983, process evaluation findings will continue to provide information to target group decision makers. In addition, at the close of this year, an initial study comparing product evaluation findings of the control groups with those of selected pilot project sites in Cochabamba will be conducted. The control group study should be conducted on an experimental or quasi-experimental basis using two sets of control or comparison groups. One control group should be from a rural Quechua-speaking community that has a school population similar to that of communities being served by the pilot project in Cochabamba. Another control group should be a rural Spanish-speaking school community similar in every way to the Cochabamba pilot project sites except for the incidence of Quechua-speaking students. Note that the treatment sites selected for the control group study are sites that have

received the bilingual education treatment in the Cochabamba pilot project for several years. No schools from the Sucre region should be sampled for this study since program in those schools will have been underway only a very short time.

In 1984, the on-going process evaluation will continue. Also, evaluation information from the pilot project schools and control group sites will be updated.

The final year of the project (1985) will see the Researcher/Evaluator supervising the last activities of the process evaluation and developing procedures for the final project evaluation study. During the last few months of project operation, a three-person team will develop a final evaluation report based on an outline prepared by the Researcher/Evaluator. The final report will include an analysis of (1) antecedent conditions, (2) types and levels of program implementation, and (3) product evaluation data. On the basis of the data, the team, in conjunction with key project personnel, will make recommendations for further bilingual education program activities in Bolivia.

As part of the evaluation design, the Evaluator/Researcher will provide selected project and MEC personnel with on-the-job training and experience in program evaluation.

The following pages outline the evaluation design and identify the antecedent and transaction variables that will form the basis for data collection under this component of the project.

Evaluation Design

A. Focus of Evaluation

1. Identify major decision-making groups
2. Specify decision-making responsibilities for each group
3. Identify information needs (see Tables B and C).

B. Collection of Data (Information)

1. Identify information sources
2. Select, adapt, or develop instruments and data collection methods
3. Indicate sampling procedures
4. Note special conditions and schedule for data collection.

C. Organization of Information

1. Devise methods for aggregation and compilation of data

D. Analysis of Information

1. Select Analytical Procedures
2. Designate means for performing analysis

E. Administration of Evaluation

1. Develop overall design schedule including reporting dates
2. Identify personnel/contract needs
3. Refine evaluation budget
4. Devise procedures for monitoring evaluation activities

PROJECT INFORMATION NEEDS

The following two lists, one of antecedent variables and one of transaction variables, is intended to provide project decision-making groups (USAID, MEC, project personnel, and school staff) with a comprehensive but not exhaustive bank of program variables specific to the implementation of bilingual education programs in rural Bolivian communities. Since it would be impossible for project personnel to evaluate all of the variables listed, the major decision-making groups will prioritize their information needs. It may be necessary to add several variables to these lists.

Antecedent Variables

Antecedent variables are those information items which should be known before the project is implemented in a particular community. Information regarding these variables will provide the baseline data context evaluation for both the target arid control group communities.

I. Parents and Community

A. Attitudes and Knowledge

1. Attitudes of parents and community members toward bilingualism
2. Attitudes of parents and community members toward bilingual education

C. Organization of Information

1. Devise methods for aggregation and compilation of data

D. Analysis of Information

1. Select Analytical Procedures
2. Designate means for performing analysis

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I. Parents and Community

A. Attitudes and Knowledge

1. Attitudes of parents and community members toward bilingualism
2. Attitudes of parents and community members toward bilingual education

3. Parents' and community members' understanding of bilingual education program.
4. Parents' knowledge of relationship between L_1 , L_2 acquisition and academic achievement.
5. Attitudes of Quechua-speakers toward Spanish-speakers.
6. Attitudes of Spanish-speakers toward Quechua-speakers.
7. Ability of Quechua-speaking parents to assist children in the learning process.
8. Parent socialization and teaching practices.

B. Socio-Economic Background

1. Socio-economic classification of community.
2. Socio-economic status of families in the program.
3. Degree of urbanization of community.

C. Socio-linguistic Environment

1. Spanish language use in the community.
2. Amount of Spanish language, if any, spoken in homes of students.

D. Cross-Cultural Contact

1. Description of domains of interaction between Quechua and Spanish speakers.
2. Frequency of interaction between Quechua and Spanish speakers.
3. Language status of Spanish and Quechua in interaction between Quechuas and Hispanics.
4. Sanctions on speakers of Quechua or Spanish for using their mother tongue.

II. Students

A. Language Proficiency

1. Student home language.
2. Student language proficiency in Quechua.
3. Student language proficiency in Spanish.
4. Student ability to deal with complex cognitive tasks in both languages.

B. Attendance Patterns

1. Student attendance by grade, sex, age, and home language.
2. Student transiency rates.

C. Educational and Experiential Background

1. Extent of previous formal schooling.
2. Previous enrollment in bilingual program.
3. Non-formal education experiences.

D. Academic Achievement

1. Student linguistic skills in both languages (oralcy and literacy).
2. Student achievement in content areas in either or both languages.

E. Age and Grade Levels

1. Pupil mean age by grade, sex, and home language.
2. Concentration of non-Spanish-speakers by grade level.

F. Attitudes

1. Student attitude toward school.
2. Student attitude toward bilingual education.
3. Student attitude toward home culture and Quechua language.
4. Student attitude toward Hispanic culture and Spanish language.
5. Student self-esteem and self-concept.

III. Teaching Staff

A. Attitudes

1. Attitudes of teachers toward bilingual education.
2. Attitudes of teachers toward bilingualism.
3. Attitudes of teachers toward Quechua culture and language.
4. Teacher commitment to implement program as designed.
5. Teacher expectations for student achievement.
6. Degree of enthusiasm personnel have in being involved in program.

B. Knowledge, Skills and Experience

1. Proficiency of instructional staff in speaking, understanding, reading, and writing Spanish.
2. Proficiency of instructional staff in speaking, understanding, reading, and writing in Quechua.
3. Teacher's knowledge of bilingual education methodologies.
4. Teacher's competence in bilingual education methods.
5. Teacher's competence in classroom organization.
6. Teacher's competence in subject matter.
7. Teaching staff's experience in bilingual education.
8. Teacher's knowledge of the relationship between L₁ and L₂ development and academic achievement.
9. Teacher's knowledge of relationship between language and thought.
10. Teacher's knowledge of L₂ acquisition.
11. Teacher's knowledge about reading methodologies.

C. Cultural Awareness

1. Instructional staff knowledge of student culture including sociolinguistic patterns of language use and development.

IV. Administrative and Governing Agencies

A. Philosophy

1. Philosophy of bilingual education of administrators implementing program.
2. Comparison of program structure and official philosophy of bilingual education in MEC/Bolivia.

B. Administrator knowledge and Attitudes

1. Administrator's knowledge of the relationship between first language (L₁) and L₂ acquisition and academic achievement.
2. Attitude of administrators toward Quechua culture and language.
3. Attitude of administrators toward Quechua culture and language.
4. Attitude of administrators toward bilingualism.
5. Administrator's knowledge of bilingual education pedagogy.

- 6. - Administrator's understanding of the relationship between language and thought.
- 7. Administrator's understanding of the educational, sociological and psychological factors that affect learning and teaching in a bilingual setting.

V. Materials

A. Availability

1. Availability of instructional materials for all subject areas and supplemental reading, in both Quechua and Spanish that are appropriate to terms of levels of difficulty, language usage, cultural content and interest levels.
2. Quality of available materials.
3. Quality of available materials as compared to materials used in non-bilingual program schools.

VI. Miscellaneous

A. Evaluation

1. Extent to which all objectives have been specified, agreed upon, and their quality ascertained.
2. Availability of bilingual management systems that can be used to monitor student progress and teacher activity.

B. Fiscal

1. Total budget available.
2. Per student expenditures by funding sources.

Transaction Variables

Transaction variables are those information items which allow decision-making bodies to know how well and to what extent the project is being implemented as designed. Such information should guide program modifications for the purpose of program improvement.

I. Parents and Community

A. Home-School Interaction

1. Extent of communication between schools and parents about the purposes and objectives of the bilingual program.
2. Extent of communication between school and parents about the implementation of the project.
3. Extent of communication regarding student progress.

B. Parental Involvement

1. Involvement of parents and other community members in the design, implementation and decision-making of the program.
2. Extent to which participate in the program in the school.

C. Parent Education

1. Extent to which the program provides opportunities for parent education.

II. Instruction

A. General Curriculum

1. Extent to which parents, teachers, and other staff are aware of the program design.
2. Extent to which the goals of the program are clear to the teachers.
3. Degree of congruence between objectives and activities that lead toward fulfillment of the objectives.
4. Extent to which the curriculum has been developed in all areas to respond to the needs of Quechua-speaking students.
5. Existence of on-going student assessment procedures and instruments.

B. Grouping Practices

1. Number of groups
2. Linguistic composition of groups.
3. Number of students per group.
4. Criteria for grouping.

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C. Cultural Considerations

1. Measure of school ambience (socio-linguistic and physical).
2. Extent to which classroom activities validate experiences students bring to the classroom.
3. Extent to which students are assisted to expand into an identity that includes bicultural behaviors and values.
4. Extent to which students' culture is incorporated in the curriculum and teaching methodology (including local speech forms).

D. Organization of Classroom Time

1. Amount of time allocated to each subject area.
2. Extent to which program time lines and schedules are being followed.
3. Actual time spent on task.

E. Language Usage

1. Amount of Quechua used for instruction in subject matter areas.
2. Amount of Spanish used for instruction in subject matter areas.
3. Extent to which Quechua and Spanish are separated for instruction.
4. Extent to which the particular models of instruction are being implemented.
5. Extent to which students see and hear bilingual personnel and other use Quechua in and out of the classroom.
6. Extent to which students see and hear bilingual personnel and other use Spanish in and out of the classroom.

F. Spanish as a Second Language

1. Description of second language approach used in the program.
2. Existence of a criterion for the introduction of Spanish reading.
3. Extent to which there are naturalistic approaches to second language acquisition.
4. Extent to which the SSL program incorporates content areas (Math, Health, etc.).

G. Quechua Language Development

1. Description of Quechua reading methods used in the program.
2. Extent to which naturalistic approaches for L development are used.

III. Training

A. Staff Training

1. Extent to which there are on-going staff development activities.
2. Extent to which staff development plan matches staff needs.
3. Amount and quality of staff development.
4. Times at which staff development occurs.
5. Extent of administrator involvement in training.
6. Extent of inservice training for school administrators on intent and rationale for bilingual education.

IV. Materials

A. Quality and Quantity

1. Extent to which Quechua language instructional materials are appropriate in terms of content, level, interests of students, and culture.
2. Number of Quechua language books in classroom/schools which are accessible to students.
3. Quality of differences between Quechua language materials and Spanish language materials.
4. Extent to which SSL materials are appropriate in terms of content, level, interests of students and culture.
5. Extent to which an agreed upon process is followed in the acquisition, adaptation, and development of materials.

V. Program Management

A. Evaluation

1. Extent to which appropriate assessment instruments are being used to measure student progress.
2. Extent to which assessment materials and procedures are controlled to avoid contamination.

3. Extent to which process evaluation information is reported to target audiences.
4. Extent to which program improvements are made based on program evaluation
5. Extent to which staff performance is evaluated on an on-going manner.

B. Student/Teacher Ratios

1. Extent to which student/teacher ratios are maintained.
2. Teacher mobility rates

C. Articulation

1. Articulation of the bilingual program with other special programs.
2. Articulation of the bilingual program with the regular MEC/Bolivia program.
3. Extent to which the bilingual classes participate with other programs within target schools.

speaking population, then a combination of a 40 percent income gain and a \$20 per graduate per year value of non-economic benefits will produce a positive net present value. This appears to be a reasonable range for these values.

TABLE 7-1

Present Value of the Project Under Alternative Assumptions

Present Value of Project Costs (15% discount) \$10.365 million
 (including necessary follow-on costs)

Adjusted for Maximum Replication 8.200 million

<u>C'</u>	<u>E'</u>	<u>Income Gain</u>	<u>Value of Non-Economic Benefits (per grad. per year)</u>	<u>Present Value of Benefits (15% discount)</u>
.5	.9	40%	\$40	\$11,817 million
.5	.95	40%	\$40	12.698
.4	.8	40%	\$40	10.544
.4	.8	30%	\$30	8.197
.5	.9	30%	\$30	8.735
.5	.9	50%	\$50	14.900
.5	.9	40%	\$25	9.513
.5	.9	35%	\$25	8.701
.5	.9	40%	\$20	8.745
.5	.9	40%	\$16.45	8.200
.5	.9	40%	\$30.55	10.365

A final way of looking at the project is to consider what minimum level of valuation of non-economic benefits would be required to produce a zero net present value of the project. Given our best estimates of the other items on Table 7-1, C' of .5, an E' of .9 and an income gain of 40%, the result of this computation is shown in the last two lines of 7-1. If maximum replication is assumed, the minimum required value of non-economic benefits is \$16.45 per graduate per year measured in 1980 dollars. The mission is satisfied that the value of such consumption benefits is in excess of that figure.

If no further replication is assumed, the minimum required value of consumption benefits is \$30.55, a less likely but not impossible figure.

TELEGRAM

INDICATE
 COLLECT
 CHARGE TO USAID

FROM LA PAZ CLASSIFICATION UNCLASSIFIED

E.O. 11652:
 TAGS:
 SUBJECT:
 ACTION:

ACTION: SECSTATE WASHDC
 UNCLASSIFIED LA PAZ 4700
 ADM AID

USAID
 AMB
 DCM
 ECOM
 CHRON

E.O. 12065 N/A
 SUBJECT: Education Sector Performance
 REFERENCE: State 11/7149

EDU

1. The purpose of this cable is to present current information and data on education sector performance as requested in CDSS response and as background for Nicastro consultations June 16-20.

HRDD 2
 DIR 2
 DR
 DPE
 C
 RF
 EM B3

2. Improvement in the sector's performance in fact began more than six months ago under Guevara government with Minister Baptista's important personnel changes decisions. and action-forcing/Gueiler government's Minister Carrasco has continued Baptista's openly supportive policies of AID programs and instituted bi-monthly meetings on project progress with Mission sector staff ~~and senior Ministry personnel.~~

DRAFTED BY: *John H. Meadowcroft*
 HRDD: John H. Meadowcroft:dp
 CLEARANCES: Thomas Nicastro (draft) *MS*
 DRAFTING DATE: ~~3/29/80~~ 5/29/80
 TEL. EXT. 320
 CONTENTS AND CLASSIFICATION APPROVED BY: AD: Malcolm H. Butler *MS*

DR: KKelly (in draft)
 DPE: HHandler (in draft) *MS*

UNCLASSIFIED

CLASSIFICATION

4700

3. Of equal importance as improved Ministry leadership, however, is the recently developed support of AID programming by the Rural Teacher's Union, with which Mission has established a positive working relationship. Frequent discussions have cut through much of the Union's earlier misunderstanding and mistrust, which had been the source of serious implementation delays. An important example of this new attitude is the Union's critical intervention in support of the recently signed technical assistance contract for Rural Education II.

4. The improved climate is illustrated by recent disbursement data. Monthly FY 1980 expenditure projections made in July, 1979 were based on prior spending patterns. Accomplishments have far exceeded these estimates. During first quarter FY 80, Rural Education I (054) disbursed 106 percent of estimates and Rural Education II (057), 187 percent. During second quarter FY 80, 054 disbursed 199 percent of estimates and 057, 196. Education sector accounts for less than 20 percent of Mission portfolio, but accounted for 33 percent and 38 percent of first and second quarter expenditures respectively. To date the sector has experienced no counterpart funding problems.

5. More rapid disbursements are significantly assisting projects to meet their objectives at a faster pace than heretofore experienced. Rural Education I training programs are being supported by a new purchasing system begun in January, and all training materials needed for January-July have been purchased. The non-formal education team has not only expanded efforts in training and field work but is presently readying a pilot effort in nucleo self-sufficiency, which if successful should be expanded. Also, the new Bolivian Rural Education I project manager is forming an advisory team composed of the 21 nucleo directors and is in constant constructive contact with Cochabamba educational officials. In Rural Education II the 61 Bolivians trained in Colombia last year are training teachers and rural normal school administrators very effectively. The Higher Institute of Education is becoming functional and in June will offer a long-term course for 100 new normal school instructors and a short-term course for 120 current normal school instructors. The curriculum development process has begun through the first comprehensive study of rural normal school curricula, and libraries have been delivered to all cooperating normal schools.

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6. Education Management (051) is scheduled for a final evaluation in August. Although a number of problems were encountered in that project, the basic/ ^{and vital} decentralization and reform which were developed have become an accepted part of the Bolivian educational scene. With support from the Ministry and the unions, the 051 evaluation can become a basic planning document for future ~~support~~ support to the decentralization effort. The construction component of this project, which still continues, has given the Mission an opportunity to work with the Ministry ^{an} to establish/ ~~an~~ MEC-administered architect and engineering capability for building construction. This has proven so successful that Mission has decided to coordinate 054 and 057 building activities through this body, and will be working to develop this same configuration with other ministries needing A & E expertise.

7. Pipeline analysis of the Education Sector can be misleading. Both Education Management and Rural Education II cannot begin to request bids for the \$/6 million of construction programmed under this item until architect and engineering construction plans are finished. These plans, due in September 1980, are on or ahead of schedule. Although there

~~was obvious bidding problems on 051, and many~~

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Classification

were obvious bidding problems in O51, in many cases due to forces beyond ~~Ministry~~ Ministry control, these same problems should not affect Rural Education II because of the experience gained with O51 and O54, and the USAID-MEC arrangements for administering engineering, para 6 above. For O54, \$2.6 million remains to be disbursed. Mission is presently proceeding smoothly with documentation for \$1.2 million in tool purchases and teacher incentives; remaining expenditures will proceed on an orderly basis.

8. Logical sequence of events in the Mission's education strategy began with a nation-wide decentralization effort of MEC's day-to-day administrative and curricular efforts under Education Management. Rural Education I, a regional pilot effort, is field testing and institutionalizing non-formal, bilingual education, and teacher college linkage strategies. Rural Education II, based on Rural Education I experiences, is a nation-wide effort to strengthen rural normal school primary teacher training. The proposed FY 1980 bilingual education project is based on Rural Education I efforts, and will further institutionalize Quechua-Spanish teaching in Cochabamba and Sucre. Continuing with this sequence, Mission is developing for FY 1982 a nation-wide program that would give rural nucleos greater economic independence and stability, based on the premise that the nucleos can provide the necessary vehicle for

~~continued efforts to improve the quality of education and to increase the~~

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CURRENT ENROLLMENTS, NUCLEO SCHOOL SYSTEM

based on Rural Education I, 22 nucleos

	Grade Pre-Básico	1	2	3	4	5	Total per School
<u>Central</u>							
No. students	50	55	45	1	1	1	
No. classes	1	1.5	1.5	1	1	1	165
<u>Sectional</u>							
No. students (one-two classes/school)	-	25	15	5	-	-	45
Average of eight sectionals per nucleo							
TOTAL per system:	50	255	165	70	20	15	

PROJECTED ENROLLMENTS, NUCLEO SCHOOL SYSTEM

Bilingual Education Project

	1982	1983	1984	1985	TOTAL LOP
Grade 1	255	255	255	255	1020
2	-	230	230	230	690
3	-	-	205	205	410
4 & 5	75	75	75	180	405

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Bilingual Education (Chief of Party)

Scope of Work

I. Administration

1. Organize and coordinate the work of the technical assistance team.

II. Training

1. Assist counterparts in arrangements for out of country training of Specialists.
2. Provide in country training in bilingual education to National and Departmental Center Specialists.
3. Participate with Specialist in training of Technicians in bilingual education theory and methods.
4. Conduct, with other technical assistance team members, annual up date seminars for Specialists and Technicians; assist Technicians to prepare seminars for teachers.
5. Participate with Specialist in training of Rural Normal School Instructors, and Departmental Education Administrators.
6. Assist Rural Normal School Instructors and Specialists at the Higher Institute of Education in Tarija in preparation of courses in bilingual education.

III. Curriculum and Teaching Materials

1. Assist area technical assistance specialist to assure appropriate application of bilingual education theory and methods.

IV. Evaluation

1. Assist area specialist to assure appropriate application of bilingual education theory and evaluation experiences.

IV. BILINGUAL EDUCATION SPECIALIST

1. Able to speak read, write and understand Spanish, level 3 or higher. Preferably, knowledgeable of Quechua.
2. Masters' or Doctorate in bilingual education or related field.
3. Experience in bilingual education programs at the elementary school level (Preferred 3 yrs.)
4. Knowledge of bilingual education and language acquisition theory, methodology and techniques at elementary school level.
5. Ability to communicate the intent and content of bilingual education programs to a variety of audiences from the ministry level to rural school communities.
7. Required, with experience working in rural Latin America, preferably Peru, Ecuador, and Bolivia
8. Excellent health.
9. Knowledge of bilingual education and language acquisition theory.

Teacher Training

I. Training

1. Assist in arrangements for out of country training of Specialists.
2. Provide training to National and Departmental Specialists in methods of teacher education.
3. Participate with Specialists in training of Technicians in teacher education.
4. Work with Technicians in in-service training of teachers at their schools, and in community education programs.
5. Conduct, with other technical assistance team members, annual up date seminars for specialists and Technicians; assist technicians and prepare seminars for teachers.
6. Participate with Specialist in training of Rural Normal School Instructors, and Departmental Education Administrators.
7. Assist RNS instructors and specialist at the Higher Institute of Education in development of courses on bilingual education.
8. Assist Teachers in use of public education materials at the community level.

III. TEACHER TRAINING ADVISOR

1. Must - be able to speak, read, write and understand Spanish (FSI 3) preferably higher.
2. Have a Masters' or doctorate in Teacher Education.
3. Have had documented experience in Pre-service and In-service Teacher Training.
4. Have a working knowledge of planning and carrying out workshops in teacher training; demonstrated success in working with groups to create harmonious personal relationships; to be capable of adapting.
5. Preferably with knowledge of and/or experience in bilingual education. materials and methods to a diversity of cultural idiosyncrasies.
6. Latin American experience in Rural Education required, preferably in Peru, Ecuador, or Bolivia.
7. Be able to work with and contribute to completely mono-lingual, Spanish speaking work groups for periods of hours - or even days - with no contact whatsoever with other English speaking technicians.
8. Be in excellent health, physically active, and cleared for "high altitude" living and working.
 - . Be able to travel extensively by air and by land, often over hazardous terrain.

Research and Evaluation Specialist

I. Research

1. Design research studies and supervise research activities:
 - a) Quechua variation in Cochabamba and Chuquisaca
 - b) Quechua variation in Oruro and Potusi
 - c) Spanish language acquisition by native speakers in Bolivia
 - d) Quechua language acquisition by native speakers in Bolivia
2. Assist in training of Specialists Technicians and Teachers in research design and application of results.
3. Assist in Seminars for Specialists, Technicians and Teachers in understanding and application of understanding and application of research results.

Evaluation

1. With the Specialists, design an evaluation system for project schools and communities.
2. Design and carry out plan for baseline community and school data collection and processing.
3. With Specialists, Technicians and Teachers, collect and process formative evaluation data, and present for application in project schools.
4. Assist in training of Specialists, Technicians, and Teachers in evaluation design and application of results.
5. Assist in Seminars for Specialists, Technicians, and Teachers, in understanding and application of evaluation results.

V RESEARCHER/EVALUATOR

1. Able to speak, read, write and understand Spanish at level 3 or higher. Preferably, knowledgeable of Quechua.
2. Masters' or Doctorate in Education evaluation and research or related field.
3. Knowledge of evaluation designs and procedures, including statistics.
4. Experience in bilingual program evaluation---preferably at the elementary school level-(2 yrs.)
5. Knowledge of the intent and content of bilingual education programs.
6. Knowledge of research on language and linguistics.
7. Be able to work with other, equally qualified technicians in a team situation.
8. Excellent health.

Curriculum and Teaching Materials Specialist

I. Training

1. Train Specialists for national and departmental bilingual education centers in curriculum and teaching materials development.
2. Participate with Specialists in training of Technicians in application of project curriculum and teaching materials, and development and use of teacher made teaching materials.
3. Conduct, with other technical assistance team members, in annual up date seminars for Specialists, and Technicians; assist Technicians to prepare seminars for teachers.

II. Curriculum and Teaching Materials Development

1. Assist Specialist in development of bilingual education curriculum and materials for preparation of rural normal school instructors at the Higher Institute of Education in Tarija.
2. Assist Rural Normal School Instructors in development of bilingual education curriculum and materials for preparation of new teachers at the rural normal schools.
3. With the National and Departmental Center Specialists, adapt the curriculum and materials from the Cochabamba pilot project, and develop new curriculum and materials, supervise the application of these in project schools, and revise as necessary.
4. With National and Departmental Center Specialists, prepare materials for public education about bilingual education, to be disseminated by newspaper, radio, and television.

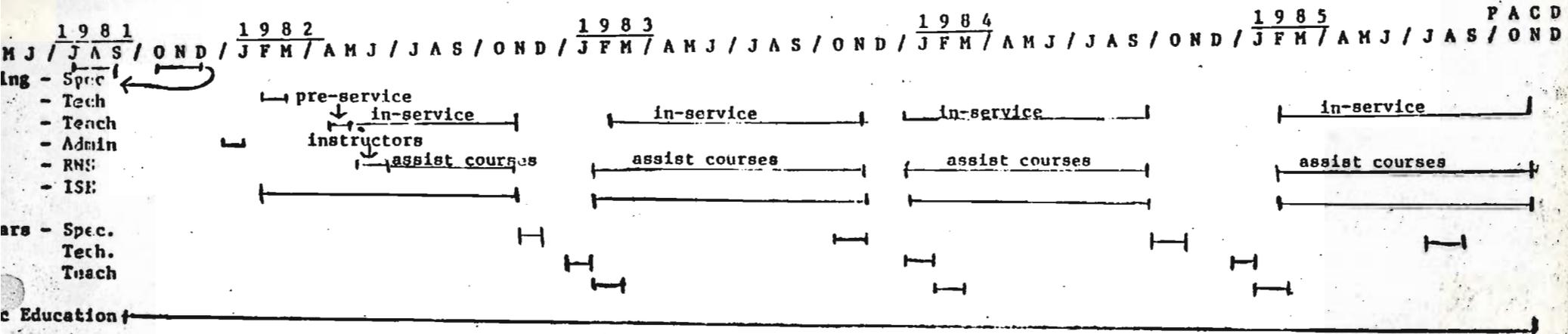
Materials Production Specialist

1. Pan Materials preparation facilities at National Center and production facilities at Departmental Centers; Supervise the installation of equipment.
2. Train center personnel in systems of materials preparation and production, and use of equipment; assist in ordering materials.
3. Assist in identifying and arranging materials production beyond center capacity, e.g. , color printing.
4. Assist in implementation of materials production system.
5. Design and assist in implementation of materials distribution system.
6. Assist in arrangements for production and distribution of public education materials, e.g., newspaper supplements.

II. MATERIALS PRODUCTION SPECIALIST

1. Must be able to speak, read, write and understand Spanish (FSI-3).
2. Have a professional-level working knowledge of all basic (printing and reproduction tasks, such as: off-set operations; binding; designing shop lay-outs; work flow etc.
3. Have experience in making, or soliciting production bids; of estimating materials costs, timing for "runs", delivery dates and man-hour requirements.
4. Be experienced in packing books and materials for delivery or storage.
5. Have had at least five years experience as owner or manager of an "averaged sized" print shop.
6. Understanding fundamental inventory and record keeping procedures.
7. Be able to work with other, equally qualified technicians in a team situation.
8. Required, have experience living and/or working in rural Latin America.
9. Hold at least a high school diploma, or its equivalent.
10. Be willing to travel extensively by air, and by land - often over hazardous terrain.
11. Be in excellent health, and cleared for "high altitude" living.

Teacher Training (G)

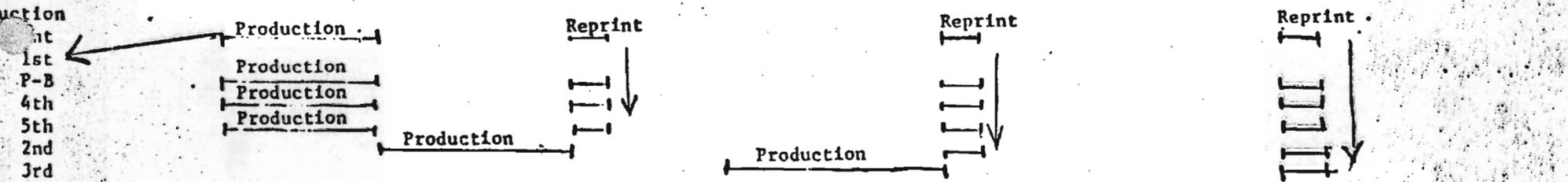


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Job	81	82	83	84	85
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EVALUATION OF THE BILINGUAL EDUCATION COMPONENT OF THE
RURAL EDUCATION I PROJECT (AID LOAN No. 511-V-054)
IN COCHABAMBA, BOLIVIA

July 1978

I. GENERAL BACKGROUND

The majority of Bolivians speak either Quechua or Aymara as their native language. Of the 5,600,000 inhabitants, 36% speak Spanish, 27% speak Aymara, 34% speak Quechua, and 3% speak other Indian languages, but with the exception of a bilingual program among the minority groups in small, remote jungle tribes, the official language of school is Spanish, "the language of upward mobility." Bolivian schools follow the national, urban-oriented curriculum and the few teaching materials that exist are written in Spanish.

Spanish language arts are taught the same in all parts of the country, whether or not the student is a native speaker of the language. The concept of a separate Spanish-as-a-second language approach, based on a contrastive analysis of Spanish and the particular native language of the student, has not yet influenced textbook producers. On the other hand, judging by a teacher survey done in the Department of Cochabamba, most rural teachers are bilingual in Spanish and the Indian language of the region and they do employ the vernacular orally in the classrooms as an aid to student comprehension. A Rural Education seminar in Cochabamba (July, 1976) specifically recommended the preparation of didactic materials - "adequate to the linguistic, social and geographical needs of rural, vernacular-speaking community."

Nevertheless, 80% of the rural students that enter first grade drop out before reaching fourth grade (Diagnóstico Integral de la Educación Boliviana, MEC. Dirección Nacional de Planeamiento Educativo, Julio 1973). Traditional curriculum administrators interviewed as part of the present study* attribute the causes of school dropouts principally to social and economic reasons outside of the tractability of school. None of these educators thought that changing the curriculum, or, more especially, teaching students in a language the students could understand, would alter the enormously high dropout rate. Educational administrators and rural teachers in the District of Cochabamba tend to attribute dropout rates to lack of supplies and appropriate teacher training, as well as to social and economic conditions in the students' homes. In contrast, all bilingual teachers interviewed in July 1978 (33) thought bilingual education would lower the dropout rate.

Clearly, implementation of the bilingual education approach was merited. USAID/B, in conjunction with the Ministry of Education and Culture, developed a project paper to launch a reform of rural education. An ambitious socio-

linguistic survey of over 200 communities, selected for national representativeness, was initiated but subsequently interrupted before the data were analyzed. By January, 1976, an AID-MEC loan agreement had been signed to initiate educational reform in the District of Cochabamba. Four major project components were identified: (1) a rural teacher education and inservice training program; (2) a curricula reform and materials improvement program; (3) the redesigning, remodeling and expansion of multipurpose nuclear schools and the Rural Normal School at Vacas; and (4) a wide range of non-formal educational projects. Bilingual education, according to the loan agreement, was scheduled to be a subcomponent to two of these four components; the rural teacher education and inservice training program and the curricular reform and materials improvement program. Additionally, some of the non-formal units were expected to be developed in Quechua.

Confusion concerning the precise role of bilingual education within the project was to plague the project from its inception. While it was generally understood that bilingual education was to be implemented on an experimental basis to see how it worked, there was sharp divergence of opinion concerning the extent of the experiment. Some project leaders tended to view the bilingual experiment as a relatively small experiment within the project, while the Bilingual Team leaders tended to see it as a much more important aspect of the Rural I Project, i.e., bilingual education as a possible major experiment to be compared to traditional instruction in comparable schools not in the RE I project. The Project Paper (PP), which might have helped clarify the issue, was never translated into Spanish and the English version was not readily available. While the PP lists "bilingual education" as one of the four major project components, the loan agreement substituted the

aforementioned component #3 for it, and relegated the focus of bilingual education activities to a subcomponent category under curriculum development.

The widespread reluctance to implement many bilingual programs, even on an experimental basis, was explained by those in charge of the Rural Education I Project to be the logical outgrowth of an alleged resistance to vernacular education on the part of parents, community leaders, and teachers.

To highlight bilingual education, it was believed, would jeopardize the whole project. However, when all teachers of the 22 project nucleos were polled in November 1977 (see Appendix A), the vast majority were strongly in favor of being involved in a bilingual education program. Of the 20 communities whose parents and leaders were contacted in June 1978, all exhibited a positive attitude toward bilingual education. Nevertheless, the project administration suggested (July 1977) that the bilingual education experiment be limited to one of the 22 nucleos embraced by the project. The bilingual education team argued to increase the number of bilingual nucleos and on September, 1977, an oral agreement was made to designate 6 nucleos as bilingual and 16 nucleos for piloting the reformed curriculum produced by the Curriculum Team working solely in Spanish. The language of the loan agreement was frustratingly ambiguous in terms of the extent to which bilingual education was to be implemented. The project personnel belonging to the Curriculum Development and the Bilingual Education groups proposed in July, 1978 to expand bilingual education to all first grade classes in all 22 nucleos by 1979, and to all second grade classes by 1980. This

was agreed to by the project leaders. The reformed (monolingual Spanish) curriculum is to follow the current first graders through school but it is not to initiate any programs with new students.

A second frustration experienced by the bilingual team was the lateness of getting its 8 members on board. While the reformed curriculum team was fully constituted and working by July, 1977, the bilingual team did not begin to function as a 2-man team till August, 1977, two additional team members began work on February, 1978, and the final two in April, 1978. Unlike the reformed curriculum team, the bilingual team was not authorized a secretary, a graphic artist, or a mimeograph operator.

A third frustration experienced by the bilingual team was that the reformed curriculum team went well beyond its duties as outlined in the loan agreement, which limited its responsibilities to outlining the scope and sequence of each grade level, to encompass the production of curriculum classroom aids, a responsibility of the bilingual team. Unfortunately, the reformed curriculum guides and materials which this curriculum team developed do not even mention the possibility of teaching through the medium of Quechua. The reformed curriculum team did approach the teaching of Spanish language arts from a second language perspective but it did not base this instruction on a contrastive analysis, either from a phonemic, grammar, or lexical perspective, of the two language systems. Although the bilingual team incorporated in its bilingual curriculum a number of

objectives generated by the reformed curriculum group, it was clear to both teams that two completely disparate curricula were being developed.

Hindsight clearly shows that relegating the bilingual team to be a subcomponent of the curriculum team was not a desirable way to organize the development of a bilingual curriculum. It would have been more efficient for the curriculum team to have been a subcomponent of bilingual education.

A fourth frustration that continues to bedevil the bilingual team is the excessive bureaucratic delay in getting authorization to make necessary purchases, to initiate training programs, or to do virtually anything that requires higher approval. Several examples will suffice to illustrate this. In August, 1977, the bilingual plan was presented to the University New Mexico team, critiqued, revised and then submitted to the project administration in early October, 1977, for approval. The local project administrator approved the plan in June, 1978, and submitted it to the La Paz coordinator. To date there has been no response from La Paz. A second example is that permission to run the initial training program for the new bilingual teachers was requested in November, 1977. Oral authorization was given in January, but funds to implement the course were not received until March 29, 1978, well after the initiation of the school year. Authorization to conduct the July in-service training was transmitted orally (and erroneously) one working day before the training was to commence, and then rescinded near the close of the program. Few, if any, of the memos written by the bilingual team have been answered in writing, and most have

not been answered either in writing or orally. Had the bilingual team waited for formal approval for their work, little would have been accomplished and the project's goals would have been crippled.

II. BASELINE DATA: INPUT VARIABLES

Data have been collected by the bilingual education team on the following variables through four different survey instruments:

Teacher variables:

Name

Nucleo

School

Sex

Age

Civil state

Whether normal school graduate

Number of years teaching experience (per grade; in central school; in sectional school).

Which is preferred grade to teach

First language (Spanish, Quechua) (See also: Resumen del Diagnóstico, 1-5).

Where second language was learned (home, school, other) (See also: Resumen del Diagnóstico, 9-10).

Adequacy of instruction in reading, writing, oral Spanish, and math as judged during a visit by bilingual team member

(good, average, deficient)

Whether teacher resides in the community where he/she teaches.

Attitude toward use of Quechua (see: Resumen del Diagnóstico, 11-20).

Where lived and studied as a child (see: Resumen del Diagnóstico, 6-8).

Student variables:

Name

Teacher

Nucleo

School

Grade

Year of data entry

Date of birth (day, month, year)

Number of older brothers

Number of younger brothers

Birth order of child in terms of his/her brothers/sisters

Sex

Personal characteristics:

Deaf

Left-handed

Happy/outgoing ("alegre")

Taciturn

Timid

Agressive

Linguistic classification:

Monolingual Quechua-speaker

Incipient bilingual

Subordinate bilingual

Coordinate bilingual

Monolingual Spanish-speaker

School history:

Preschool

Beginner

Repeater

Years in school

Previous attendance record (good, average, deficient)

Grades (good, average, deficient) in reading, writing, oral
Spanish, math.

Number of days attended school in year

Number of absences during school year

Scores in tests administered as part of independent evaluation

School variables

Adequacy of classrooms (adequate, inadequate)

Adequacy of furnishings (sufficient, absent)

Number of students enrolled

Number of students in attendance during visit from bilingual
team member

Whether student attendance was regular or irregular

Number of lesson students were studying in reading, writing,
oral Spanish, and math, during visit from bilingual team
member

Whether school lunch ("desayuno escolar") is offered students

Community variables:

- Whether there was a meeting with parents and/or community leaders
- Type of presentation used in community meeting (verbal explanation or "classroom" demonstration)
- Reaction of participants to community meeting (very positive, positive, reserved, negative).
- Whether community desired adult literacy instruction
- Average distance traveled by students to get to school (15 min., 30 min., 45 min., over 45 min.)

All of the foregoing variables, with the exception of the student variables to be collected at the end of the year, have been placed on tables by the evaluator to facilitate summarizing and transfer to computer tapes (see Appendix C).

To provide a "feeling" for this data, the following brief description of the program is based on statistics already collected.

Teachers: Average age of the teachers is 31; half are males and half females; 85% are married; all but one is graduate of a normal school. The average teaching experience encompasses three years in a central school and six years in a sectional school. Of this teaching experience, four years were spent teaching first grade, three years teaching second, a year and a half average experience teaching third, one year teaching fourth, and a little less than one year experience in fifth. All but two teachers

received a rating of "satisfactory" in Quechua. 63% of the teachers reside in the community where they teach. 32% of the teachers are currently teaching more than one grade level.

School setting: Only one-third of the classrooms and furnishings were judged adequate. Three percent of the schools have no furnishings. The average classroom enrolls 25 students in first grade; 19 students were, on the average, present during a random day in June, 1978. In 69% of the cases student attendance is irregular. Lunch is offered in 55% of the schools.

Community characteristics: Meetings with parents and community leaders have taken place in 60% of the communities with bilingual programs, and the reaction, on a 4-point scale, was "very positive" in 21% of the cases, and "positive" in 79%. In 84% of these communities, adult literacy programs were requested (there are no project plans to provide them). In 62% of the cases, students live 45 minutes or more away from the school.

III. OUTCOME MEASURES

To measure the relative impact of the bilingual program as compared to schools using either a "reformed curriculum" (developed by the Curriculum Team of Rural I) or the traditional Bolivian curriculum (used in schools outside of the project), two types of outcome measures, archival and test data, will be entered in the records of all nucleos (a central school plus its "sectional" satellite schools) that participate in the experiment (see Section IV).

The archival data is available, by school, in the Supervisory offices of Prof. Trigo (the data are tabulated by an employee, Wilge Torrico Calvi) in Cochabamba. They exist in the following form:

Archival Data:

Inscritos (matriculados)

Efectivos (asistentes)

Retirados (los que abandonaron sus estudios por cualquier razón)

Reprobados (los alumnos que deben repetir el curso)

Aprobados (los alumnos que pasan al grado superior)

From these numerical data, percentages (of dropouts, students passed and flunked) can be calculated for each school and nucleo in the experiment.

In addition to these data which are available several weeks after the close of the school year, the following additional data are available from the records of classroom teachers: average daily attendance, by grade level (this needs to be calculated from attendance records).

(The names of the students in any of the above categories are also available as an input variable from the teachers records.)

Test Data:

A norm-referenced, objective test of academic achievement in reading, writing, oral Spanish, and mathematics will be administered to each child in the experiment who is available for testing at the close of each school year.

Format for Test (Grade 1)

Reading comprehension will be tested on the first grade level through 2 or 3 reading selections, controlled for structural and lexical appropriateness, followed by approximately 10 multiple-choice items. While the test will be read silently by the student, the responses may be orally administered by the teacher or tester and the responses marked on the test sheet. Since regular-school first graders have had no opportunity to read Quechua, their reading selection will be in Spanish, while the bilingual students will be given a selection in Quechua for analogous reasons. Second and third grade students will be tested in both Quechua and Spanish. Great care must be taken to produce equivalent (but not translated) texts, one in Spanish, the other in Quechua.

Writing ability will be tested through dictation. Approximately 10 words will be dictated by the tester. The first three words will be scored for legibility, the other 7 words for correctness. Each word (i.e., item) is worth 0 or 1 points. As before, Spanish words will be dictated to the control classes and words of similar difficulty in Quechua for the bilingual classes.

Oral Spanish Comprehension will be tested by having the tester read two times each of ten sentences of graduated difficulty and requiring the students to mark an appropriate response on an answer sheet. For example, the tester might say, "yo quiero una pelota", and the student would put an X on the drawing of a ball provided by the answer sheet. The same items

would be given treatment and control students.

Mathematics will be tested by approximately 10 items of graduated difficulty. Any necessary explanations will be provided orally in the language of student preference.

Timeline for Test Construction. This test of approximately 40 items, taking a maximum of 20 minutes per subtest to administer, will be jointly developed by the bilingual and the reformed curriculum teams.

Timeline

July 78	August 78	September 78	October 78
Test Development	----> pilot in several schools	----> revise--> print	----> administer, October 16-27

Other outcome measures, such as teacher attitudes toward both languages and cultures (Hispanic and Quechua) and parental satisfaction with the school program, will be measured if the necessary instruments can be scheduled for development.

IV. EVALUATION DESIGN

A. Selection of Schools. The Rural Education I project encompasses 22 nucleos. These were classified by a sociologist according to their socioeconomic characteristics, with A-type communities being relatively modern and Spanish-speaking; with C-type communities being isolated and Quechua-speaking B-type communities were those half-way in between. The Bilingual Team identified 2 B-type nucleos and 10 C-type nucleos to be candidates for a bilingual education program. Slips with the

name of each of the 12 nucleos were then prepared. Two drawings were made (one for each type of nucleo) out of a motorcycle helmet. The drawn slips were designated as bilingual experimental and the remaining 6 slips (i.e., nucleos) were designated as control schools. (The project's chief administrator later switched one pair of schools in order to have a bilingual nucleo within convenient travel of visitors to the project.)

To validate independently the comparability of the bilingual and control schools, a meeting was held with 10 of the 11 zone supervisors and the district director (all are non-project personnel.) They were given 22 slips of paper, each with the name of a nucleo, and were directed to place them in as many or few piles as they wanted. No criterion was given to aid the classification other than to request that all the nucleos within any classification be similar enough to be able to compare school achievement between any pair of nucleos. The selection process took approximately one hour. The author interrupted only to select randomly various pairs from within a given classification to ask whether those two nucleos were comparable. At the end, 3 categories were used; the criteria for classification was very similar to those used by the sociologist several years before.

The supervisors were then asked to classify 69 nucleos that were outside of the 22 project nucleos. This list of outside projects was then brought to the attention of the Bilingual Team. They were asked to select from the appropriate category (B or C) the non-project nucleo

geographically closest to each of the bilingual nucleos. The writer then designated these nucleos as non-project control. This process has selected 6 bilingual nucleos, 6 reformed curriculum nucleos, and 6 non-project traditional curriculum nucleos. (A nucleo has not yet been selected as control for Quwari and Challacara.)

The following nucleos were selected to be in the experiment:

<u>Bilingual</u>	<u>Reformed Curriculum</u>	<u>Traditional Curriculum</u>
Boquerón Q'asa	Cañadas	Rodeo
Copacabana	Pisqumayu	Lope Mendoza
Quwari	Challacara	-- (to be selected)
Laymiña	Sacabambilla	Chimboata
Novillero	Tucwa Baja	Taboada
Melga	Ilurigrande	Candelaria

B. Type of Comparisons

This selection of sites permits the following comparisons over the length of the project:

	1978	1979	1980
1st. Grade	B-RC-TC	B-TC	B-TC
2nd. Grade		B-RC-TC	B-TC
3rd. Grade			B-RC-TC

B = bilingual curriculum

RC = reformed curriculum

TC = traditional curriculum

C. Data Collection

The following is the schedule for the collection of outcome data for the 18 nucleos in the experiment.

	1er Año			2do Año			3er Año			4to Año			
	1er Grado	2do Grado	3er Grado	1er Grado	2do Grado	3er Grado	1er Grado	2do Grado	3er Grado	1er Grado	2do Grado	3er Grado	4to Grado
Datos de los Archivos:													
Asistencia	X			X	X		X	X	X				
Deserción	X			X			X	X			X	X	X
Repitencia	X			X			X	X					X
Promoción	X			X	X		X	X	X				
Transferencia	X			X			X	X					
Pruebas:													
Lectura													
Español	C			C	X		C	X	X				
Quechua	B				X		B	X	X				
Escritura													
Español	C			C	X		C	X	X				
Quechua	B			B	X		B	X	X				
Comprensión Oral													
Español	X			X	X		X	X	X				
Quechua									X				
Matemáticas (bilingüe)	X			X	X		X	X	X				
Otras Materias					X			X	X				
Autoestimación				X	X		X	X	X				
Satisfacción de padres de familia				X	X		X	X	X				
Actitud de Profesores: lengua/cultura				X	X		X	X	X				

B = Bilingüe
 C = Control
 X = Ambos, bilingüe y control

To accomplish this testing, 6 teams of 2 people each will be formed. Each team will test one nucleo in each condition during a 2-week period the first year, and in 3-week periods the second and third years. (It may be necessary to add a third team member the last two years). Those members of the team who are involved in classroom testing, or observation of classroom testing, must be bilingual in Quechua and Spanish. (Project administrators need not be bilingual). The general testing procedure to be followed consists of the team testing first the central school, then having the central school teachers whose students were tested assist the team in testing the sectional school.

The following schedule shows how the testing would be organized for the first year.

LOGISTICA DE EQUIPOS DE EVALUACION - OCTUBRE 1978

C A R No. A

C A R No. B

C A R No. C

TEAM 1C	TEAM 2C	TEAM 3C	TEAM 4	TEAM 5	TEAM 6
BILINGUAL EDUCATION					
Boquerón Q'asa	A. Copacabana	Cuwani	Laymika	Novillero	Melga
2 Central Teachers	2 Central Teachers	1 Central Teacher	1 Central Teacher	1 Central Teacher	2 Central Teachers
4 Sectional Schools	4 Sectional Schools	3 Sectional Schools	4 Sectional Schools	3 Sectional Schools	6 Sectional Classrooms
2 days required	2 days required	2 days required	3 days required	2 days required (- 2 days travel)	2 days required
REFORMED CURRICULUM					
Cañadas	Fisqumayu	Challacaca	Sacarvilla	Tucuma Baja	Iluri Grande
7 Sectional Schools	4 Sectional Schools	7 Sectional Schools	5 Sectional Schools	7 Sectional Schools	7 Sectional Schools
(2 local teach.)	(2 local teach.)	(2 local teach.)	(2 local teach.)	(2 teach.avail.)	(2 teachers)
3 days required	2 days required	3 days required	3 days required	3 days required	3 days required
TRADITIONAL CURRICULUM					
Rodeo	Lope Mendoza		Chimboata	Taboada	Candelaria

D. Data Analysis

Data will be transferred to computer tape, preferably in Cochabamba (CENACO), then analyzed in La Paz. Rafael Martínez of CRA may be available to supervise data analysis.

Analysis of variance between student achievement in the 3 conditions (bilingual education, reformed curriculum, traditional curriculum) will be effected, and the input variables will be factored to determine what additional characteristics account for variance in outcome measures. (It should be noted that Quechua is used orally in all three conditions).

An approximate, ball-park estimate of the cost of effecting this evaluation follows. The cost estimates are divided into 4 categories: the comparison group testing; the sociolinguistic survey; dropout study; teacher and student language usage study.

1. Bilingual Comparison Group Testing

(6-6-6 nucleos)

6 members project staff x 15 days ea. x 180 pesos	US\$ 810
6 members from outside project x 20 days ea x 180+ stipend \$85	US\$ 1,580
2 clerks to tabulate data in preparation for putting on (3000 per mo.) computer tape x 2 mo.ea.	US\$ 600
1 secretary x 3 mo.	US\$ 525
5 hrs. computer time at \$150 per hr.	US\$ 750
100 terminal time at \$bs. 120 per hr.	US\$ 600

1 statistician x 3 mo. (w/fringes & per diem)	US\$ 900
1 director of evaluation x 3 mo.	US\$ 900
3 jeeps for 15 days (including gas & maintenance)	US\$2,250
1 technical advisor x 1 mo. (w/fringe, travel, and per diem)	US\$4,000
1 IBM typewriter rental (3 mo.)	US\$ 150
Rental of office facilities x 3 mo.	US\$ 600
Supplies	US\$ 450
6 sleeping bags, 6 lanterns, etc.	<u>US\$ 450</u>
Cost per year	US\$14,565
x 3 years	<u><u>43,695</u></u>

2. Tabulation, Computation, Analysis and Report

Writing for National Sociolinguistic Survey and
Community Profiles.

2 clerks to tabulate data for computer proces-
sing x 5 mo. ea.

US\$1,500

1 secretary x 6 mo.

1,050

20 hrs. computer time at \$150 per hr.

3,000

200 hrs. terminal time at \$b.120 per hr.

1,200

1 statistician x 5 mo.

1,500

1 project manager x 6 mo.

1,800

1 project technical advisor x 2 mo.

4,160

Rental of office work area facilities x 6 mo.

1,200

Supplies

1,500

US\$ 16,910

3. Drop out Study

200 randomly selected interviewers with each school
teacher, family, community leader, and desertee
(100 students in each of 3 randomly selected nucleo
who drop out between 1st and 2nd grades)

Team of 2 interviewers working 7 weeks (6 interviewers
per day (3 each), 3 days per school, 12 days per
nucleo, 3 nucleos = 35 working days

US\$ 900

2 weeks to design instrument and pilot

2 weeks to tabulate data after collection

1 week to reproduce instruments, etc.

Transportation: 1 jeep x 2 mo.

1,100

10 hrs. computer terminal at \$b.120 per hr.

60

1 hour computer time at \$150 per hour

150

1 statistician x 2 weeks

200

1 secretary x 4 mo.

700

1 project director x 4 mo.

6,000

Supplies

450

US\$ 9,560

4. Survey of student and teacher language and other
input variable

Format teacher/community input data for control schools

Gather above data

Test teacher classification of student language classifications

the variance in outcome measures.

3. The resources of the background education unit of the Rural Education I project need to be enhanced and/or augmented by:
 - a) Reviewing the administrative structure within which the bilingual education unit operates, with a view to increasing their ability to do their jobs especially at that point in time when the curriculum team will have finished the scope and sequence outline of the third grade;
 - b) Increasing the unit's personnel to include additional professionals to work in teacher training and classroom supervision, due to the planned expansion in the number of classrooms to be initiating bilingual education;
 - c) Increasing the unit's support personnel to include a secretary, a graphic artist, and a mimeograph machine operator-messenger person;
 - d) Greatly expediting approvals for the bilingual plan and budget expenditures, especially supplies, printing, and teacher training expenses such as per diem for participants;
 - e) Monitoring closely the compliance with the July agreement to expand bilingual education to all 22 nucleos and to limit implementation of the reformed curriculum to following the students currently studying that curriculum (in 16 nucleos) through their third grade;

- f) Adding to the curriculum plans for 4th through 8th grades provision to teach Quechua as a continuing language;
 - g) Augmenting the bilingual program effect on a community by scheduling regular meetings with professionals working in radio communication, non-formal education, adult education, community development, etc.
4. Assistance reaching the classroom teacher (bilingual and other) needs to be dramatically increased by:
- a) Seeing that supplies expeditiously reach the teacher;
 - b) Undertaking an immediate remodeling of many of the classrooms.