PD-AAB-349-A1

5260502

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE (X APPROPRIATE BOX) — [X] ORIGINAL [ ] CHANGE [ ] ADD [ ] DELETE — PP 69p. — DOCUMENT CODE 3

2. COUNTRY/REGIONAL ENTITY/GRANTEE: PARAGUAY

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4. PROJECT NUMBER: 526-0109 (526-502)

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6. ESTIMATED FY OF PROJECT COMPLETION: FY 79

7. PROJECT TITLE - SHORT (STAY WITHIN BRACKETS): RURAL RADIO EDUCATION

8. ESTIMATED FY OF AUTHORIZATION/OBLIGATION — A. INITIAL MO. 12 YR. 75 — B. FINAL FY 78

9. SECONDARY TECHNICAL CODES (MAXIMUM SIX CODES OF THREE POSITIONS EACH): 636 | 611 | 670

10. ESTIMATED TOTAL COST ($000 OR EQUIVALENT, $1 = ____)

A. PROGRAM FINANCING	FIRST YEAR B. FX	C. L/C	D. TOTAL	ALL YEARS E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	163	78	241	394	207	601
(GRANT)	(163)	(78)	(241)	(394)	(207)	(601)
(LOAN)	( )	( )	( )	( )	( )	( )
OTHER 1.						
U.S. 2.						
HOST GOVERNMENT		92	92		277	277
OTHER DONOR(S)						
TOTALS	163	170	333	394	484	878

11. ESTIMATED COSTS/AID APPROPRIATED FUNDS ($000)

A. PROGRAM ACTIVITY ALPHA CODE	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE	FY 76 D. GRANT	FY 76 E. LOAN	FY 77 F. GRANT	FY 77 G. LOAN	FY 78 H. GRANT	FY 78 I. LOAN	ALL YEARS J. GRANT	ALL YEARS K. LOAN
EH	530	640	241		193		167		601	
TOTALS			241		193		167		601	
ESTIMATED EXPENDITURES			85		230		204			

12. PROJECT PURPOSE(S) (STAY WITHIN BRACKETS) [ ] CHECK IF DIFFERENT FROM PID/PRP

1. To develop MOE capability to provide radio instruction to a greater percentage of the rural population.
2. To experiment with different methodologies and techniques to provide rural primary school education through the use of radio.
3. To determine what institutional mechanisms help to make rural radio education programs feasible and more effective.

13. WERE CHANGES MADE IN THE PID/PRP FACESHEET DATA NOT INCLUDED ABOVE? IF YES, ATTACH CHANGED PID AND/OR PRP FACESHEET. [ ] YES [X] NO

15. ORIGINATING OFFICE CLEARANCE

SIGNATURE: Donald S Brannan

TITLE: Acting Mission Director, USAID/Paraguay

DATE SIGNED: MO. 09 DAY 25 YR. 75

16. DATE RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MO. ____ DAY ____ YR. ____

AID 1330-4 (5-75)

Part I. Project Summary and Recommendation

B. Recommendation

--	GRANT	$601,000
--	LOAN	---
	TOTAL NEW AID OBLIGATIONS	$601,000

Part I. Project Summary and Recommendation

C. Description of Project

1. Project Overview. Approximately 48% of all primary schools in Paraguay are incomplete in that they do not include instruction in all grades 1 through 6. Most of the incomplete schools are located in rural areas. A large portion of them do not provide for instruction beyond the first cycle (grades 1-3). This makes it impossible for many rural children to obtain a complete primary level education.

The need to add classes, making the schools complete, is recognized by the Ministry of Education and Worship (MOE), but it is not economically feasible to construct the classrooms and employ the additional teachers in sufficient numbers to meet the total demand. The MOE has therefore proposed that instruction be provided by radio to help fill the gap where complete schools cannot be provided at this time.

This project is designed as a three-year pilot program to determine the extent that instruction by radio can be used at the second cycle (grades 4-6) level to provide a complete primary program in areas where the schools are incomplete. It, therefore, will follow the MOE primary curriculum. Caaguazu Department has been selected as the zone or area in which the pilot study will be conducted.

Instruction by radio will be provided each week day and will include: (a) language, (b) social studies, (c) mathematics, and (d) health and nutrition at the second cycle (grades 4-6) level. The broadcast will be augmented with workbooks and/or other instructional materials which require fundamental skills in reading and writing. Learners, ages 10-14, who have completed at least third grade but not sixth grade and who are not regular primary students will be enrolled in this project. Initially the program will focus on fourth grade instruction. Fifth and sixth grade levels will be added later as they are prepared.

Participants will be enrolled in advance and will be expected to attend "classes" regularly at a "learning center", under the supervision of a "monitor".

A learning center is a place designated for that purpose by the project coordinator. It may be located in a school (if space permits), a community center, a church, or a home -- wherever 5 to 15 children can congregate conveniently to listen to the radio program, participate in discussion about the program, have a place to read and write, etc.

To insure quality radio reception, learning centers, where needed, will be provided with a transistor radio by the project.

A monitor is an unpaid volunteer who will be responsible for assembling the group at the listening center to listen to the radio program, to lead discussion about the program in accordance with instructions provided in advance by the project, to distribute work sheets and other materials to the students as appropriate, to assist and advise the students in their study, etc. Monitors may be retired teachers, community leaders, graduates of secondary schools, older children in the community who have completed primary school, or others in the community with sufficient educational background and managerial competence to conduct the center activities.

2. Organization and Management of Project Activities. The overall organization and management of this project will be the responsibility of the Department of Tele-education and will work in conjunction with the Department of Primary Instruction. The field supervision of the program will be provided by the school supervisors of Caaguazu Department, in cooperation with the Villarrica Normal School. The local commercial radio stations also have made commitments to the MOE to cooperate with the project.

Subject area and curriculum specialists, under the auspices of the Department of Primary Instruction, will be responsible for preparing course outlines, workbooks, monitor's guides, and other related printed materials.

The Department of Tele-education will be responsible for all technical operations related to the broadcast of the program such as script writing, programing, and the preparation and distribution of tapes.

Radio Charitas, in Asuncion, has agreed to provide the use of studio facilities for taping and pretesting the programs, in the amount of 10 hours per week, for approximately nine months at no charge. A recording studio will be developed and equipped by this project for continued use.

The school supervisors of the Caaguazu Department will be responsible for the recruitment of monitors in cooperation with local schools, for the distribution of printed and other learning materials to the listening centers, and will provide the general supervision of the program at the local level.

Villarrica Normal School, located in Caaguazu, will provide student teachers, as part of the student teaching assignment, to assist the school supervisors with the supervisory activities related to the radio project.

Two local (commercial) radio stations, Radio Guairá in Villarrica and Radio Caaguazu, both of which can be received throughout the Caaguazu Department, have indicated to the MOE that they will provide the needed broadcast time as a public service.

3. How Activities will Attain Outputs and Achieve Purpose. The successful completion of the activities briefly described in C-2 above will lead directly to the major outputs forecast for this project:

a. The preparation of the course outlines, workbooks, monitor's guides, etc. by the Department of Primary Education and the preparation of instructional tapes by the Department of Tele-education will provide the anticipated outputs b, e, and g. (See pages 18 & 19 for list of outputs).

b. The development of the recording studio will lead directly to output a, a MOE recording studio.

c. The broadcast of the programs together with the support activities of the monitors will lead to the attainment of output c -- an increase in the access to primary education and to the extent it was successful, it would increase the percentage of school-age students who complete the primary grades -- output d.

d. The collection of the baseline data and the evaluation of the project are activities to be conducted by MOE and will lead to the conclusions to be drawn about the project -- output h.

e. Finally, the experience of the 30 staff members of MOE in carrying out the above activities and achieving the above outputs will provide outputs f&i-a MOE staff capable of continuing and expanding the program.

The successful attainment of the anticipated outputs will lead directly to the major project purposes.

The acquisition of the broadcast tapes and other resources, the recording studio and the competencies of the staff will achieve the purpose of being able to expand the program economically if it is proven successful.

The evaluation of the project will attain the major purpose of determining the feasibility of the use of radio instruction to provide a complete primary instructional program in the rural areas of Paraguay where it is otherwise unattainable.

4. End of Project Status

a) A MOE staff capable of preparing instructional tapes for use by government and participating private radio stations; b) a MOE staff capable of preparing back-up material such as workbooks and teachers' guides for use by students and teachers in the field; c) a feedback and evaluation system that will determine the effectiveness of its radio activities; d) a national education plan which includes radio education as a means of offering education opportunities; e) a recording studio equipped to provide nationwide radio education programs; f) a 4-6th grade curriculum adapted for radio broadcasting; g) audio and related visual instructional materials prepared for 3 grades and 4 subject matter areas; h) 1,500 elementary school children who attended incomplete schools will be participating in supervised radio education programs; and i) 35 primary schools and 35 community centers will be functioning as rural radio schools. These will be verified through internal MOE records, periodic evaluations, and overall USAID supervision.

D. Summary Findings

Under a previous USAID contract the MOE has prepared and produced curriculum outlines, textbooks, workbooks, and related materials in all subject areas for use in the primary schools of Paraguay. With this experienced staff together with the inputs of USAID they seem to have the needed competencies and resources to develop the needed instructional materials for this project.

The Tele-education Department has been operating for three years, planning and producing weekly educational programs for both radio and television. They have the basic staff needed, with the technical assistance provided by USAID, to carry out this aspect of the program.

Caaguazu Department currently has three supervisors of primary instruction. Two additional supervisors will be added for this project and will assume full-time responsibility for the establishment of listening centers and their subsequent operation. Although this is a new experience for them the MOE points out their training and their type of experience qualify them for these responsibilities. MOE indicates a commitment to the fulfillment of these responsibilities.

A key factor to the success of this project is the recruitment of and sustaining an adequate staff of volunteer monitors. Based on data supplied by MOE there appear to be sufficient numbers of individuals in the various communities with academic skills sufficient to serve as monitors. Also based on information from MOE, interest in this type of project is expected to be sufficient to secure the services of an adequate number of volunteers. This factor needs close attention. Techniques and procedures for sustaining interest and a backup staff need to be carefully designed and carried out.

Essential to the success of the project is the recruitment and retention of the students. In Caaguazu Department 22 of the 24 urban schools are complete but only 64 of the 238 rural schools are complete. According to the 1972 census, the number of children ages 7-14 in Caaguazu Department was 50,753. Of these 9,564 had never entered school. Adequate data are not available but there appears to be a large number of children who meet the criteria for this radio school project.

Based on national data approximately 50% of the rural children who enter first grade complete third grade. About 15% complete sixth grade. With a rural population of about 25,000 children ages 10-14 in Caaguazu there should be about 8,750 who meet the criteria for the radio program. The MOE estimates about 40% of these would be interested in participating in the radio program, or a potential enrollment 3,500. The anticipated size of the project is approximately 70 listening centers with a total enrollment of 700, or about one fifth the potential. This leaves a considerable safety margin.

This project was initiated by the MOE. MOE staff have worked along with each step of the plan. The basic staff who will be involved in the project are already on board.

There are substantial data to indicate that this project has a good probability of success and the MOE is ready to implement it.

The project meets all applicable statutory criteria.

E. Project Issues

The original PROP for this pilot project was submitted February 25, 1975 (Project No. 526-11-699-095.7). It was reviewed on May 8, 1975, and the DAEC Committee determined that additional information with regard to certain elements of the proposal was required (see STATE 11579 May 17, 1975). Project approval was deferred pending submission and AID/W review of a project paper which addressed more fully those issues.

At the suggestion of AID/W, short-term consultants were contracted to research those issues raised in the DAEC review and to analyze fully the entire project. Based on the information developed and further discussion of the project with the MOE, the Mission is satisfied that those issues have been successfully resolved.

1. Additional Information Requested. The additional information requested by AID/W is now integrated into the body of this PP as follows:

a. Target Group. The total target group is defined and analyzed in Part II.A. 3 and 4. The target group for the pilot project is defined in Part II.B.1.

b. Monitors. All issues related to monitors are analyzed in Part II.B.2. e and f.

c. Logistics. All logistic issues are analyzed in Part II.B.2.b, c, d, and e.

d. GOP Personnel. This issue is analyzed in Part I.D.

e. Cost of Replication. Cost of replication is analyzed in Part III.D.

f. Evaluation. A research and evaluation specialist is provided for in the budget. The evaluation will include cost benefit analysis.

2. Consider Reduction in Scale. This issue is analyzed in Part III.D.

3. Detailed Budget. This is included in Annex B.

There are no known major issues that should be focused on in the review of this PP.

Part II. Project Background and Detailed Description

A. Background

Paraguay is a sparsely populated, predominately rural (62.5%) country with a population of about two and a half million (1972 census indicated 2,357,955). Typical of developing countries Paraguay has a high population growth rate (the median age is 17) and a low income per capita. Also like other developing countries it is confronted with rising costs and inadequate resources to deal with the problem.

The Government of Paraguay is committed to an accelerated rate of economic development in order to provide better opportunities for the people of the country, and recognizes that education constitutes an essential part of this process.

1. Incomplete School System. Paraguay has never been able to enforce its compulsory education law at any level. Many children are unable to go to school because there are no schools within commuting distance. (There is little transportation and few roads, most of which are unusable when it rains). About half of the schools do not offer all six of the primary grades making it impossible for those who enter school to complete the primary level. (1,639 out of 3,366 were incomplete in 1973). There is an inadequate supply of qualified teachers to teach the children even if school buildings were available. There are other discouraging elements as well. Many families cannot afford to buy shoes or clothes for their children to wear to school, or the books and tablets for them to use in their study. Many children must work and cannot take the time to be in school all day.

The needs are complex. The needs for better family incomes and for better transportation systems relate to the problems of school in both ways. More income and better transportation are needed to help solve the school problems. Better schools and better education of the people are needed to help resolve the economic and social problems of the society.

In order to develop a complete primary education system the needs are compound -- the need for more and better schools that are accessible to all children; the need for more and better qualified teachers and institutions to train them; the need to attract and hold the children in the schools when the schools are available.

2. Major Strides in Education. In spite of the inadequacies that now prevail in the education system and the limited economic resources to overcome them, great strides have been made in the last two decades and will continue to be made in the future, as indicated by the Minister of Education and Worship.

> The policy of the Ministry of Education and Worship is to progressively complete all the incomplete schools in the country and has made significant gains. This is demonstrated by the increase in the number of students graduating from sixth grade in the past ten years. The number of sixth grade graduates in 1963 was only 12, 872, while in 1973 the number of graduates was 30,368 which represents an increase of 135.9%. 1/

The change that is taking place in the primary education program of Paraguay is reflected in the increases in the number of schools, teachers and students since 1954. In 1954 there were 1,781 primary schools in Paraguay; in 1963 there were 2,501, a 40% increase; and by 1973 there were 3,366, an increase of 89% in two decades. There were 8,284 teachers in 1954. This increased to 12, 358 in 1963, an increase of 49%; and by 1973 the number was 15,871, a total gain of 92%. The number of students in 1954 was 254,118. This increased to 334,638 by 1963, a gain of 32% and to 459,393 by 1974, an 81% gain over the 1954 figure. 2/ This indicates an "average" pupil-teacher ratio of about 30 to 1. This, of course, varies with a ratio of 40 to 1 common in the more crowded schools.

This quantitative growth represents, in part, the "population explosion" and the increased number of school-age children. At the same time it represents a strengthening in the system and an increase in the quality of education. Indicators of quality are the qualifications of the teachers and the holding power of the schools. Of the 8,284 teachers in 1954, only 40% met certification requirements. In 1973, 85% of the 15,871 teachers were certified. The "holding power" of the schools is reflected in the percentage of children entering first grade who remain in school to graduate from sixth grade. The percentage graduating in 1968 was 20.1%. Each year the ratio has increased. The latest available data are for 1973 at which time 25.0% were completing primary schools. This does not take into consideration such factors as repeating a grade and graduating later, death, or mobility, with some migration to Argentina.

1/ Desarrollo Educativo en Cifras, Período 1954-1973, Ministry of Education and Worship, Asuncion, Paraguay, 1974, p. 16.

2/ Ibid. Data extracted from table, p. 22.

3. An Analysis of the Education Profile. Perhaps the best available data that will indicate the level of education being attained by the population of Paraguay is a profile of the highest completed grade by the population, age 15-19, as indicated in the 1972 census. This would indicate the outputs in terms of primary education for the late 1966's. It can be assumed it has improved somewhat since that time.

In 1972 there were 262,381 children in the 15-19 years of age group. Of these, 15,564, or 6% never entered school. The highest grade completed by those who entered school are as follows (percentages based on total population of age group): first grade 2%, second grade 9%, third grade 13%, fourth grade 14%, and fifth grade 12%. Of the 44% graduating from primary school, half terminated their formal education at grade six, and half (22% of that age group) entered secondary school. 3/

The 1972 census also reported that there were 90,767 children ages 7 to 14 who were not in school. This is about 18% of that age group. Data were collected for the census to indicate why these children were not in school. 16,463 were not in school because there was no school close to home. This represents 18% of those not in school. There were about equal numbers of boys and girls in this category. About two-fifths of these were ages 7 and 8. It appears that some children start school at age 9 due to the distance from school, while others never enter at all. 2,740 were not in school because there was no superior grade to enter. This represents 3% of those not in school. Over half of these are ages 13 and 14, probably indicating that many have completed sixth grade and there is no secondary school for them to attend. About half are boys and half are girls. 9,912 were not in school because they had to work. This represents 11% of those not in school. Over half of these are age 14, many of whom have already completed primary school. Two-thirds are boys. 37,856, about 42%, of those not in school indicate lack of funds being the reason. This could be lack of funds for books and supplies or lack of funds for shoes and clothes. 6,526, or 7%, indicated physical incapacitation as the reason for not being in school. The balance gave "other"or no reason for not being in school.

4. Basically a Rural Problem. The data thus far presented indicate the national situation as a whole. By far the greatest problems in terms of lack of school facilities and school attendance are in the rural sector.

3/ The percentages were computed from data presented in table on page 137 of the National Census of Population and Homes Report, 1972.

In 1963, 54% of the primary school students were enrolled in the urban schools in spite of the fact that 62.5% of the people live in rural areas. This has shifted in 1973 with 54% of the students enrolled in the rural schools, reflecting the expanded and improved program but major problems still exist.

The holding power of the urban schools has remained relatively constant at about 50%. About half of those who enter first grade remained in school for all six grades. The picture is much different in the rural area. In 1968 only 8.7% of those entering first grade were still in school at six grade level. This has improved each year. In 1973 (latest data available) the holding power had increased to 15.5%.

Nearly all of the incomplete schools are in the rural areas. Isolation and lack of transportation related to school attendance is a rural problem. The shortage of schools and teachers prevail more in the rural than the urban areas. There are over 90,000 primary school age children not in school and most of these are in the rural sector.

The Ministry of Education and Worship (MOE) is making major strides toward a more complete and adequate primary school system. The increasing school-age population draws heavily upon the limited economic resources, just to maintain the present ratios. But the Ministry is committed to moving ahead, seeking an improved educational system, not just at the primary level but all levels, in order to help improve social and economic conditions of the society.

It is difficult to reach out to the isolated pockets of civilization in this expansive country through the traditional school program. Any approach that is to be used must be economical both for the government and the families of the children. The government cannot afford, in the foreseeable future, to send out to these sparsely populated areas, sufficient teachers to provide appropriate educational opportunities for all. Nor can it provide transportation to bring the children to consolidated schools. Even if it could there is no assurance that the children would not have to work or that their parents could afford to buy books or shoes to send them to school. Any solution to this problem must not only be economical but must also be flexible in terms of time of day and length of time each day in school. It must be flexible in terms of where school is taught, bringing the school to the neighborhood if an existing school is too far away. Since teachers cannot be brought into each small neighborhood and new schools cannot be built there, any instructional program to be developed at this time must draw upon the human resources already available in each small community or neighborhood as well as the housing facilities that already exist and may be used for this purpose. The involvement of local human resources would not only have the advantage of economics but the involvement by the people in the program itself is likely to stimulate interest and increase commitment

to the idea of obtaining an education for their children. Another major factor affecting interest and success in school is the language barrier. Most families in the rural sector speak Guarani. Most instruction at school has been in Spanish. Learning from people in their own neighborhood and learning Spanish would also be helpful.

5. Instruction by Radio. After carefully considering the above factors and exploring ways in which other countries with similar problems have dealt with the problem, the Ministry of Education and Worship proposed the idea of the use of radio coupled with the use of local monitors, establishing learning centers in whatever facilities are available and appropriate.

There is substantial evidence to indicate such a program is feasible. There are three current instruction by radio projects in Latin America that deal with similar problems. These are the Radio Sustenanza Project in Colombia, the Potosi Project in Mexico, and the Basic Village Education Program in Guatemala. Key personnel from the MOE staff have visited these programs in the process of planning this project. They have also discussed the idea with primary school supervisors in Caaguazu Department where the pilot program is proposed and with local teachers and community leaders.

Various techniques and media have been used in connection with the three above mentioned projects and other similar programs. Key elements in the most successful programs seem to be: (a) instruction by radio broadcast, (b) supplemental printed materials to be used in conjunction with the radio instruction, (c) a suitable location for a "learning center" where small groups study, (d) a monitor to work with each individual or small group in various ways, (e) a supervisory system to oversee and manage the program, and (f) a feedback system to indicate how the program is functioning and how the students are progressing. This proposed project includes all of these elements.

B. Detailed Description

This section describes in detail major components of the project. The Logical Framework Matrix is attached in Annex D.

1. A Pilot Project. It was decided initially that a pilot project should be conducted and to refine its operation before attempting to undertake a nationwide, all grades program. It was decided to limit the pilot project (a) to one geographic region of Paraguay, (b) to the second cycle of the primary grades (grades 4, 5, and 6), and (c) to four basic subject areas.

a. The sample geographic area selected for this project is Caaguazu Department. It is predominately rural; most of the rural schools are incomplete; it is large enough to be an adequate sample; it is fairly close to Asuncion and the MOE Tele-education Center that will conduct this project; and it is served by two local (commercial) radio stations which will provide free time for the educational radio broadcasts. Caaguazu Department has a primary school enrollment of 41,793 of which 30,799 (72%) are rural, compared to the national enrollment of 459,393 of which 256,009 (56%) are rural. This will not matter as a sample since the project is confined to the rural area anyway. Caaguazu has 9,564 children, ages 7 to 14, who are not in school. This represents about a ten percent sample of the nation. The reasons given in the 1972 census report for not being enrolled in school in Caaguazu were substantially the same as the national population except a substantially higher percentage in Caaguazu listed "no school close to home" as a reason. This reflects the fact that Caaguazu is more rural than the national average. Sixty seven percent of the primary schools in Caaguazu are incomplete, compared to 48% nationally. Typical of the country, most of the incomplete schools are in the rural sector. Only 2 out of 24 of the urban schools are incomplete compared to 174 out of 238 of the rural schools. Of these incomplete schools in Caaguazu, 8 schools offer only first grade, 45 offer the first and second grades, 51 offer the first three grades, 49 offer the first four grades, and 23 offer all but sixth grade. This pattern also is representative of the national pattern.

b. Limited grade levels. Instead of providing radio instruction for all grade levels, this pilot project will be limited to the second cycle (grades 4, 5, and 6). There are three reasons for this. First of all, the greatest need is at this level in as much as most of the incomplete schools offer instruction up through the third grade and based on dropout data, parents are more committed to having their children attend the first cycle (grades 1, 2, and 3), than the second cycle. Secondly, the radio instruction program is designed to use printed materials supplementary to the radio broadcast. Students who have completed the third grade will have the reading skills necessary to use these materials. Thirdly, a major effort must be made to produce the radio programs and the supplementary materials. This will reduce by half the number of productions necessary for the project. Rather than to delay broadcast until the materials for all grade levels are produced, the first year of operation will be limited to grade 4, with grade 5 and grade 6 being added in subsequent years.

c. Limited subject areas. The subjects to be taught by radio will be limited to language, social studies, mathematics, and health and nutrition. These are the basic subjects. Limited time is available from the radio stations for broadcast. Limited time is also available from many students who have other commitments on the job or at home.

3. Description of Program. There are several key elements essential to the successful operation of the program, each of which will be described separately.

a. The Curriculum. This radio instructional program is designed as an integral part of the primary school program of Paraguay, and as such, it will be based on the new primary courses of study developed under the USAID Primary/Secondary Education Loan Project. The courses of study for each subject area will be divided into shorter units of study (probably nine to twelve weeks in length) and to the extent possible will be non-sequential -- that is, one unit can be studied without having completed the previous unit. Each unit will be dealt with as an entity. Each unit outline will include (1) the objectives of the unit, (2) procedures or ways to achieve the objectives, including the radio broadcast and the follow-up activities planned to be used in the field, (3) expected outcomes, or what the learner is expected to achieve as the result of this unit of study, and (4) how the student will be evaluated to determine if he has adequately completed the course. This procedure provides a greater degree of flexibility and permits entry into the program at various times of the year rather than just once a year, and exit from the program for short periods of time, when necessary, with re-entry possibilities without severe penalties in the progress of the program. As an added measure of flexibility, some units of study may be "multi-graded" and appropriate for study at any level of the second cycle grades.

All courses will be taught in Spanish. The language program, however, will be bi-lingual, Spanish and Guarani. This is appropriate at the second cycle level since most students have learned to read and understand Spanish by the end of the third grade. If this program is expanded in the future to include first cycle (grades 1-3), then instruction will have to be in Guarani as well as Spanish since most rural people speak Guarani as their first language.

b. Instruction by Radio. Radio programs will be 15 or 20 minutes in length and will be taped in advance from the units of study described above. They will be presented in various forms to hold the attention of the participants, including dramatizations, interviews, group discussions, lectures and games.

Based on informal discussion with local school authorities about the work schedules and life styles of the target audience families, it is believed that the best times to broadcast the instructional programs is from 11 AM to 1 PM and 5 PM to 7 PM. This pilot project is relying upon donated time from two commercial radio studios. Both are committed to cooperating with the project but the exact amount of time and time of broadcast are yet to be arranged.

c. Supplemental Materials. Printed materials such as worksheets, study guides, charts, etc. will be developed and distributed to the students enrolled in the radio program. These materials will be used under the guidance of the monitors.

d. Learning Centers. Students enrolled in this project will be expected to meet on a regular basis at a designated place called a "learning center." A learning center may be located in a school if there is available space and if the children who want to enroll in the program live within easy walking distance. It is estimated that about half of the children to be enrolled in the initial pilot project will be in this category. These probably will tend to be the larger learning centers and may range up to 15 or 20 students. Other community centers, homes or any other building facility that is appropriate, available and needed will also be designated as a learning center. To be assured of adequate radio reception each center will be provided with a radio if it is needed. In some cases this may not be necessary since a school or home may already have an adequate receiver. These centers may have as few as 3 to 5 students or more depending on the number of children wanting to enroll and the size of the facility. Each learning center will be managed by a monitor.

e. Monitors. A monitor is an unpaid volunteer who will be responsible for the operation of a learning center. They will promote enrollment, organize the regular meeting sites, obtain a radio for use in the class (if needed), maintain enrollment records on students and encourage the students to arrive on time. They will assist students during the radio broadcast, give follow-up instructions taken from radio cues, encourage and lead discussion after the broadcast, make printed materials available as well as paper and pencils, and maintain order within the groups.

The monitors of the learning centers located at the primary schools may be the teachers. The MOE indicates that the teachers will willingly serve in this capacity as a community service without additional pay. In some cases it may be desirable to obtain the services of another monitor to assist the teacher or in place of the teacher as the case may be.

The monitors of the learning centers located in places other than the school may be mothers, retired teachers, graduates of secondary schools, older children in the community who have completed primary school, or others in the community with sufficient educational background and managerial competence to conduct the center activities. Since they will be local residents, no transportation will be needed.

As part of the evaluation a comparison will be made in the operation and success of the learning centers located in the schools where the teachers manage the program and the centers located in other places in the communities and managed by "untrained teachers."

Monitors will be recruited by the MOE regional supervisors through interviews, group meetings, and public information campaign. Informal discussion with local school authorities indicate that many communities are ready and willing to participate in such a project as this, and that many people in the communities will volunteer to be monitors. It is anticipated that the problem will not be that of obtaining enough volunteers but a matter of selecting the best monitors who can do a professional job and get reliable results from this project.

Both groups of monitors (teachers and other volunteers) will receive inservice training and orientation before the radio broadcasts begin. Regional supervisors and Tele-education staff members will conduct seminars for them in Caaguazu Department. They will receive instruction on how to handle the instructional materials, how to use the "teachers'" guides, what kinds of exercises should be given, enrollment and attendance procedures, and other appropriate information. Additionally, monthly monitor meetings will be held in Caaguazu to assure coordination throughout the time of the project.

f. Supervisory System. The supervision of the learning centers will be the responsibility of the primary school supervisors of the Caaguazu Department, which currently has three supervisors. Two more are being assigned from the Department of Primary Instruction to assume full-time supervisory responsibilities with this project. The supervisors will be responsible for selecting monitors and sites for the learning centers and serving as the liaison between the learning centers and the central administration of the project. They will assist in the inservice training of the monitors, make on-site visits to the learning centers and assist the monitors with problems they may have, and assist in other ways as may be needed and appropriate.

Students from Villarrica Normal School will serve as assistants to the regional supervisors as part of their regular practice teaching assignment. Although the details are yet to be worked out it is planned that a student teacher would visit several learning centers each week to assist in the supervision. It may be possible to use these students to administer examinations periodically and to assist in the conduct of research. Their role will be more clearly defined and they will receive training for these responsibilities before they assume them.

g. Developing a Pre Broadcast Design. This project will require different types and combinations of educational technology which will have to be pre-tested according to the differences in the clientele and the learning objectives. While it is possible to hypothesize about particular formats for the project, many specific project decisions will be made after pretesting specific radio instruction alternatives and will be contained in a Final Broadcast Design.

During the pretesting period, a combination of methods, materials, and media will be tested to determine best results. The strengths and limitations of each medium will be considered in designing a multi-media system. The following preparatory measures and survey of activities will take place to the extent possible.

(1) Careful preparation and survey of several alternative radio instruction programs ("software") to determine the applicability of radio instruction in rural Paraguay sectors. Testing will assure that radio programs developed are perceived by the MOE. Tests results will reveal whether and in what ways the program needs modification.

(2) In-depth surveys of the target area to determine local and regional attitudes and behavior patterns so that program content will be relevant to the local educational situation.

(3) Survey several different monitoring systems to determine which alternatives might be more effective for the pilot project.

(4) Survey and analyze administrative and "legal" aspects of the Rural Radio Education Project so that relevant decisions can be made about the direction of the pilot project and its possible replication on a larger scale. This will include looking into admission of students to the project, certification, time requirements, and examination requirements.

(5) Survey radio facility support to determine most effective ways to reproduce materials, and broadcast instructional programs.

(6) Survey alternative means to distribute program materials to the media so that decisions can be made to design a distribution system.

(7) Survey different teaching-learning system combinations that combine various mixes to determine what combinations will be more effective.

(8) Pre-test kinds of programs that could be learned more effectively from radio in Paraguay.

In addition to the above, a thorough "system" at the pre-broadcast level will be elaborated. It will list various conceivable issues relevant to the project design. Pre-testing will include, to the extent possible, the major alternatives so that the pilot project is manageable, realistic, pragmatic, and will work within Paraguay. Following is the plan based on research and planning to date.

h. Informing the Public about the Project. Plans will be developed as to how the public will be informed about the services that will be provided by the outreach radio program; how a person goes about registering for course, etc. The potential participant needs to know what he will get out of it in terms of certification of completion of the course, credit toward completion of primary school and any other advantages he may accrue. He also needs to know what subject matter will be offered, what the expenses are other than getting to and from meeting places (if any), the frequency of meeetings, etc. This information will be provided via the radio program and related instructional programs, so they will be closely coordinated. Furthermore, plans for awarding certification of completion of courses, the application of these studies toward completion of primary school, procedures for awarding primary school certificates, etc. will be in accord with the policies and procedures of the Ministry of Education and Worship.

i. Central Staff Training. Staff training will be provided so that the team will know the policies to be followed as well as theoretical and practical aspects of the operations. Three types of training are planned for MOE personnel: (a) participant training; (b) in-country seminar training; and (c) on-the-job training.

Participant training will be provided in programming, radio broadcast technology, curriculum development, script writing, and production techniques. Various MOE personnel will work for one month in on-the-job experiences with specialists in the Radio Sustenanza Program in Colombia, the Potosi Project in Mexico, and the Basic Village Education Program in Guatemala.

In-country seminars will be conducted by the Radio Curriculum Specialist in radio production methods, curriculum development, script writing, radio presentation formats, and program content. These will be 2 to 3 day courses over a period of time. The Research and Evaluation Specialist will conduct short seminars on research techniques, designs of research instruments, and evaluation and testing techniques.

On-the-job training will be carried out during the lifetime of the project. The Radio Education Specialist will provide on-site training in all aspects of the project as part of his normal advisory role. The Radio Engineering Consultant will conduct informal training in the installation of the studio, maintenance control, techniques in broadcasting, and technical aspects of radio production. Other short courses may be conducted by Paraguayan and other groups as are deemed appropriate.

3. Sector Goal

The sector goal of this project is to expand access to primary education in the rural areas. Since this is a pilot project and is concerned with developing and testing materials and techniques to determine their effectiveness as teaching devices before their wider application, the project will focus on a manageable sample of the potential target group. While initial improvements will not have a large scale impact on the total output of the national education system, the expansion of the project could have a major effect in the future.

4. Project Purposes and End of Project Status

The project has three purposes:

a. Develop a pilot project which will assist the MOE capability to provide radio instruction to a greater percentage of the rural population.

b. Test different methodologies and techniques to provide rural primary school education through the use of radio. The results will demonstrate the applicability of radio instruction, what content and learning can take place via radio, and under what conditions.

c. Institutionalize mechanisms that help make rural radio programs feasible and more effective. Results will help determine what kinds of infrastructures are needed to make such a program work on a larger scale.

The end-of-project status are those outlined in the Description of Project and Logical Framework.

5. Outputs

a. A MOE recording studio equipped to produce radio programs for nationwide use.

b. New curriculum and courses of study, adapted for radio broadcasting, transcribed on tapes for four subject matter areas (Spanish language, social studies, mathematics, and health and nutrition) and for three grade levels (grades 4-6).

c. Access to additional years of primary education in the Department of Caaguazu increased by 15% from 1976 to 1978.

d. A substantial increase in the percentage of primary school graduates in the Department of Caaguazu.

e. Audio and related visual instructional materials completed for the 3 grades and 4 subject matter areas for use in rural education.

f. Training courses completed for MOE headquarters and field staff.

g. Minimal of 9,200 workbooks for use by listeners and 400 teachers' guides divided as follows:

(1) 4,000 fourth grade workbooks, 1,000 in each four subject matter areas; (1976)

(2) 2,800 fifth grade workbooks, 700 in each of the four subject matter areas; (1977)

(3) 2,400 sixth grade workbooks, 600 in each of the four subject matter areas. (1978)

h. Evaluation and testing instruments designed to assess learning and success of the project.

i. MOE personnel (30) capable of conducting rural radio education on a nationwide basis with a national radio education plan.

j. Approximately 70 radio schools functioning and 1,500 students enrolled in radio school classes.

6. Inputs

A detailed list of GOP and AID inputs appears in Annex B. The GOP will provide 30 permanent central staff members for this project, over a period of three years, with a total value of $175,000. It will also provide 43 part-time MOE personnel over a period of three years for a total lf $17,000. In-kind contribution from the GOP, including office space, will total $85,000 for the three years. The Mission estimates the GOP's contribution exceeds 25% of the total cost during the period of active AID involvement.

The AID grant assistance will provide the following contract personnel: a radio education specialist (36 MM), a radio engineering consultant (3 MM), a research and evaluation specialist (11 MM), and a radio curriculum and communications specialist (6 MM). AID will also provide participant training, commodities, and other direct cost expenses.

7. Assumptions

The following assumptions are made:

a. That rural teachers and monitors will actively cooperate in the project.

b. That rural students and drop outs will take advantage of the educational opportunities offered by the project.

c. That the MOE's Department for Plans and Programs, Production of Educational Materials, Vocational Guidance and Curriculum, and Primary School sections will cooperate with the Center for Tele-education in developing and implementing the project.

d. That qualified specialists can be contracted to provide technical advisory services.

e. That both the GOP and AID fulfill their inputs as planned.

Part III. Project Analyses

A. Technical Analysis

There are no apparent environmental implications of this project. Adequate planning has taken place to assure that the cost estimates are firm and reasonable. In such a relatively simple project, such items are not of major concern. The technical analysis, however, covers the appropriateness of the technology proposed and its applicability for Paraguay.

One of the most promising techniques to reach the potential students in the sparsely populated areas of Paraguay is radio. Most families, even in the remote areas, already have radio receivers. According to the 1972 census, 300,560 households out of the country's total of 427,810 had a radio (70%). In the rural target area, 163,180 homes had a radio out of a total of 255,680 rural households (60%). The number of radios increases yearly.

There is evidence that radio can have a positive role to play in education. Instructional radio, when properly planned and executed, can take over many of the teaching subjects in the absence of direct teaching, can supplement classroom teaching with additional learning experiences, and in certain cases can offer opportunities to individualize the learning and instruction process. Instructional radio has also proven to be a very effective medium in terms of cost, timeliness, and effectiveness, at the local, state, and regional level.

In meeting the constraints which prevent Paraguay from resolving problems in the education sector, radio has been used effectively in other countries as follows:

1. After initial production costs, it provides low-cost per student instruction enabling a given country to provide widespread education to the rural sector.

2. Gives possibilities of providing local programming for given locales, taking into consideration such cultural variables as language, local ethnic customs, particular local situations, and local knowledge needs.

3. It provides flexible scheduling possibilities to reach drop-out students, working students, and other alternative teaching subsystems that give more people opportunities to have some kind of educational instruction.

4. Radio programs prepared and broadcast for those living too far away to get to school can also be used in areas where a school does exist but does not include all grades, or even in areas where schools are available but for one reason or another children who are not in school are interested in pursuing their education through this medium.

5. Radio can be used to convey certain kinds of information and can be a powerful tool in strengthening the effectiveness of Paraguay's instructional program. But the effectiveness depends not only upon the quality of the broadcast itself, but also upon how and for what purposes it is used.

The materials which are designed to be used in conjunction with the radio broadcasts will be carefully selected in terms of the radio broadcast itself and the audience for whom it is designed. Other countries with similar problems have used radio instruction to good advantage, both from the economic standpoint and from the standpoint of a delivery system for education in remote areas. To the extent possible, knowledge and resource materials developed in other countries will be adapted to use in Paraguay in order to avoid unnecessary duplication of effort. On the other hand, to the extent that such materials and/or procedures are not available from the experience of others, then they must be developed for Paraguayan use as needed. To obtain first hand information on other radio education programs in Latin American countries, the Mission arranged for the Director of the Tele-education Department to visit the Basic Village Education Project in Guatemala, the Radio Primaria Program in Mexico, and the ACPO Program in Colombia.

The program's content and technology appear to be appropriate for the learning objectives and the clientele. It has been considered how to use mass media and its function to serve as a medium for a total program. Research shows that the media-based approach is more effective in the diffusion of information than in the teaching of skills of physical dexterity or systematic operations or procedures. Thus, it will probably be easier to teach Spanish, health and nutrition, and social studies, than mathematics. This is one reason that visual materials will be combined with the audio production. The mass media program, by itself, can rarely serve as an educational influence with a sustained impact, so that this technology will be combined with monitors, supervisors, and instructional materials. Likewise, logistical mechanisms have been considered all the way through the sub-system so that adequate planning does exist and few surprises are expected.

During the formation of this project the designers have taken careful thought that there are dangers of using shiny gadgets and quick solutions for difficult problems. Technique has not overtaken content nor the problem. Adequate arrangements for identifying, selecting, preparing, testing, and modifying the learning content have been made. The hardware has not come first; analysis was made of a problem and then the solution to the problems.

B. Financial Analysis and Plan

The financial aspects of the project are uncomplicated. Part III.D. below contains a simple recurrent and replication cost analysis within the

economic analysis of this project. The conclusions there are positive that the MOE can financially support the additional expenses of the expansion program after AID's disbursements for the project terminate. Since the MOE will be the only implementing agency, budget support for the pilot project and the expansion program will be uncomplicated.

The Summary Cost Estimate and Financial Plan Table explains all project resources -- both financial and in-kind. These are detailed completely in Annex B. All costs have been reviewed thoroughly by the Mission, its consultant, and the MOE. AID financed costs have been checked with the most reliable up-to-date catalogs, current salary and expense rates for consultants, and local Paraguayan authorities for local costs. The MOE personnel costs are based on actual budget figures approved by the MOE. Other MOE costs were calculated and reviewed with MOE officials.

SUMMARY COST ESTIMATE AND FINANCIAL PLAN
(US$878) Thousands

Rural Radio Education

Source → / ↓ Use	AID		MOE		TOTAL
	FX	LC	FX	LC	
Technical Assistance 1/	242				$242
Commodities 1/	98				98
Participant Training 1/	54				54
Other Costs 1/	207				207
MOE Personnel 2/				175	175
MOE Personnel 3/				17	17
MOE Central Administration				10	10
Monitors 4/				63	63
Vehicle Support				3	3
Installation Radio Studio 5/				5	5
Training Personnel 6/				4	4
TOTAL	601			277	878

Notes:
1/ See Annex B for detail
2/ Includes Tele-education Center direct staff (30)
3/ Includes other MOE personnel (43) who will work part-time
4/ In-kind contribution by volunteer monitors
5/ MOE Construction Department costs to install the radio studio
6/ MOE personnel and facilities to provide on-the-job training

The Costing of Project Outputs/Inputs Table explains the project input costs to achieve project outputs. Items Nos. 1-4 are AID financed costs while items Nos. 5-11 represent MOE actual costs and in-kind contributions. While the PP lists 10 expected outputs from the project, these have been classified into 5 project outputs for this exercise. It was felt that the 10 expected outputs fit logically into the 5 overall categories. Output No. 1 is the radio studio facility and other costs related to upgrading the MOE facilities into a more efficient operation. Output No. 2 is participant training, short-term training, and on-the-job training required to upgrade the MOE personnel. Output No. 3 is the design, testing, writing, and production of audio and visual instructional materials and curriculum development. Output No. 4 is all factors involved in transmitting the radio programs, organizing the classes, and monitoring the radio classes. Output No. 5 is the data research, pre-testing, testing, and evaluation output.

COSTING OF PROJECT OUTPUTS/INPUTS
(US$878) Thousands

x New

Rev. # ____

Project No. 526-0109 Title Rural Radio Education

Project Inputs	Project Outputs					
	# 1	#2	#3	#4	#5	TOTAL
1. Technical Assistance						
A. Radio Educ.Specialist	16	35	71	8	32	162
B. Radio Engr.Consultants	12					12
C. Research Eval.Specialist					44	44
D. Radio Curriculum Specialist			24			24
2. Commodities	23	3	62	6	4	98
3. Participant Training		54				54
4. Other Costs	30	9	103	17	48	207
5. MOE Personnel/Tele-education	18	9	103	9	36	175
6. MOE Personnel/Primary				14	3	17
7. MOE Central Administration	5	2	2		1	10
8. Monitors				50	13	63
9. Vehicles				1	2	3
10. Inst. Radio Studio	5					5
11. Training Personnel		4				4
TOTAL	109	116	365	105	183	878

Key to Project Outputs

#1 MOE Facilities
#2 MOE Training
#3 Curriculum and Instructional Materials
#4 Radio Broadcasting
#5 Research, Evaluation, Testing

AID does not anticipate further funding of this project after three years. Based on the best available information and planning, the Mission believes that the project has financial soundness.

C. Social Analysis

1. Target Group

Caaguazu Department is approximately two hours by car east of Asuncion, and half way between Asuncion and the Brazilian border. Its area is 21,613 square kilometers. There are 213,000 inhabitants; 34,000 live in four dispersed urban towns while 179,000 live in scattered villages and hamlets in the rural sector. Almost all the inhabitants are engaged in agriculture and small cottage industries.

The principal target group is 7-14 year old drop-out and non-enrollees in the primary school system. According to the 1972 census data, there were 60,317 children between 7-14 living in Caaguazu Department in that year. Of this total, 50,753 were enrolled in the primary schools, while 9,564 were not attending school at all. (Note: Part of Caaguazu has been changed to another Department, reducing the total enrollment of this age group to 41,793).

There are 262 primary schools in Caaguazu Department; 86 of these have all 6 grades while 176 are incomplete; 24 of the schools are urban while 238 are rural primary schools. Of the 238 rural schools, only 64 have all 6 grades, while 174 are incomplete. There are at least 104 rural primary schools that have enrollment possibilities only through the 3rd grade or less. The problem of incomplete primary schools is primarily a rural sector phenomena since 22 of the 24 urban primary schools in Caaguazu are complete through the 6th grade.

The MOE is incapable of providing more primary schools and teachers to fill this vacuum in the immediate future. In the first place, insufficient funds exist to build enough classrooms nationwide to provide facilities needed to expand incomplete schools into completed primary schools. Secondly, normal schools are not turning out sufficient numbers of trained primary school teachers qualified to teach in completed primary schools if they did exist. Thirdly, MOE has insufficient funds presently to pay salaries for additional primary school teachers. Fourthly, and perhaps more importantly, Caaguazu Department and other rural sector populations are well dispersed (approximately 10 inhabitants per square kilometer) so that it is impractical economically for the MOE to build schools and provide teachers where the potential enrollment would be low. Few children would be able to attend dispersed schools and they would most likely be at different grade levels. Yet, this phenomena makes rural radio education possibilities attractive both economically and practically.

The reasons for desertion from primary school in Caaguazu also follow national and regional patterns, except that many more potential students there do not attend because of the dispersion factor. According to the 1972 census, 28% of the potential primary school enrollees do not attend because there are no schools close to their homes or because schools with their grade level do not exist in their area; 7% have to work with their families; 39% stated economic problems; and 20% stated other reasons. This may include climatic conditions, transportation problems, or the unwillingness of parents to permit their children to go long distances to attend school.

This target group of rural sector children between 7-14 years old, who are not now attending primary school, appears to be a ready and willing audience to receive a radio (rural) education project. A 1974 MOE study in Caaguazu indicated that potential students there have a positive perception of school, are favorably disposed toward primary school education, and would welcome the opportunity to further their education. Based on this study it appears that the demand for primary school education in Caaguazu is at least 50% of those desertors, and may be as high as 75%.

The MOE believes, and the Mission concurs, that many of these potential enrollees will be interested in using the radio as an alternative to the conventional classroom education. The 1974 MOE study in Caaguazu indicated that 90% of drop-out students had a favorable disposition toward going to school. Furthermore, informal surveys conducted by the MOE supervisors in Caaguazu with drop-out students showed that radio education would be welcome and accepted. Additionally, the MOE is convinced that the target audience is becoming more aware each day of the necesssity to get a better education in order to enhance their socio-economic situation within the nation.

The Involvement of Women and Goals. The majority of the primary teachers are women. It is anticipated that a majority of the volunteer monitors will be women, although men volunteers will also be considered for selection as monitors on an equal basis -- based on competencies and availability of time. The chief of the MOE Tele-education Center is a woman as are the majority of the Center staff and field supervisors. Admission of students to the instruction by radio program will be on an open basis for all who meet the criteria established by the program -- a primary-age person who has completed third grade but not sixth grade and not currently enrolled in school. It is anticipated that about half of the children enrolled in this program will be girls.

2. Socio-Cultural Environment

Caaguazu Department, like the rest of Paraguayan rural society, has a social life that has been molded through years on an agrarian economy and which changes very slowly. The land provides an adequate subsistence but little monetary return. The rural communities are relatively isolated geographically and culturally. Their poor communication with other areas constitutes a barrier to social change. Rural life is simple, and the problems of the modern world rarely intrude.

Using radio will not disrupt the close family network of the Paraguayan rural family. About 60% of the rural Caaguazu households have radios and listen to them continually. They are already introduced to foreign cultural information and interventions through the radio since about 12 radio stations reach Caaguazu from Paraguay, Argentina, and Brazil. One advantage of using radio is that it will capitalize on existing social structure to introduce change. For example, the traditional rural father will not let his daughter attend school, in some cases, because of his perceived fear that older boys will take advantage of her. Yet, he would probably welcome her taking a class in his home, via radio, and under his careful eye. Also, heavy rains become an impediment to attending regular primary schools because the roads are muddy. Yet it is convenient to sit on a porch out of the rain to listen to a radio class.

It must be granted, however, that radio is an intervention into the lives of people. While it can be argued that the peasant farmer can turn off the radio, it can also be argued he has already been seduced by the outside tecnic (i.e., Jacques Ellul, The Technological Society). Yet, commercial interventions by radio are likely to continue for a while to come and so it makes sense to intervene also with education.

The project capitalizes positively on the rural students' time schedule. After research it will be possible to pinpoint accurately when students work, rest, sleep, and when they could listen to a radio class. Using field surveys, it will be possible to plan classes when they want them for their needs. Classes will match students' needs rather than the other way around.

3. Spread-Effects

Radio is unique in leaping over many socio-cultural barriers in rural Paraguay. Instead of receiving information through a two or three step flow, it is received directly and without interference.

Radio also has another unspecified effect. The target audience may be 7-14 year olds not now in school, but because radio classes will be heard via private radios, other non-target audience listeners are reached. Instruction will be heard by parents, farmers, students in regular primary school classes, store owners, priests, and other groups.

An evaluation of the Potosi Project in Mexico demonstrated that rural people had desires to migrate to cities after receiving education. The rural community people did not feel education was relevant for their community but was a ticket to get a job elsewhere. Parents did not think that education would help their community but would help their children to be able to get to the city. The project, therefore, might stimulate a gradual migration to larger cities in Paraguay. There is a definite pattern of mobility to the urban sector; yet 63% of the population is still rural.

4. Social Consequences and Benefit Incidence

The direct, secondary, and indirect effects of the project can be seen as follows:

DIRECT EFFECT - TELE-EDUCATION --------- CURRICULUM DEVELOPMENT

SECONDARY EFFECT - MONITORS
SCHOOL TEACHERS
TARGET GROUP STUDENTS

INDIRECT EFFECTS - MOE SCHOOL SYSTEM
OTHER GOP INSTITUTIONS

As is seen, the target group students are reached through inputs to the Tele-education Center and through curriculum development. Yet, the goal of the project is to reach the rural primary out of school youth.

Through this project, it is possible to reach most directly the so-called "poor majority" in perhaps one of the most efficient and cost-effective means. The realities of resource constraints and the inability of formal education to cope with the increasing demands for schools and teachers, means that many "poor majority" students will simply not get opportunities to go to school. Basic educational opportunities have remained unavailable to the most dispersed and poorest of the rural poor.

Upgraded or increased educational opportunities are only part of a very complex socio-economic situation for rural people in Paraguay. A positive scenario could show that education will provide more opportunities, social change, social mobility, community development work in the rural sector, increased income, more job opportunities, and somehow increase the "quality of life." A negative scenario could show that more education will cause migration to the city where there are no jobs, increasing levels of frustration, or no increased income. A recently completed manpower study in 1975 indicated that most new jobs through 1984 would require some kinds of educational skills. This leads the designers to believe that the project should have an employment effect.

D. Economic Analysis

Conventional treatments of economic aspects of formal education are not always useful when applied to the rural radio education project. The sources of this project are dispersed between the MOE, voluntary time, and such things as community efforts. Not all sources of revenue apply exclusively to this project, but rather may be parts of another program of another activity. In many cases the physical facilities, equipment, and teachers will be borrowed or will not be employed equally in all localities. The conventional input combination with expected production function outcomes will vary considerably in this project, making straightforward calculations and projections quite tenuous. Finally, opportunity cost analysis does not apply directly to rural sector populations that may not have alternative economic opportunities, or that the relationship of education to economic growth can be measured adequately given so many other extraneous variables clouding the picture.

Rather, at this point, it is more important to determine if the costs are reasonable to achieve the stated objectives of the project. The evaluation component of the project has built into it an anlysis of cost-effectiveness, and it is expected that more precise measurements can be made once the project is underway.

Based on available evidence, the rural radio project will be able to provide a low cost alternative to achieve educational goals. During the expansion phase, starting in 1979, the radio education program should be able to educate a student for about $10-15 per school year, whereas the conventional education program costs roughly $50 per year. It will be possible, for example, to cut the cost per student level to roughly $5-10 during the next 10 years. Research by the General Learning Corporation estimates that a radio education system costs about $3.50 for the regional level. A radio education program in Thailand with about one million students costs $0.25 per student per year.

The cost inputs, after the pilot project phase, will be minimal to complete the predetermined objectives. It would be quite difficult to assess normal costs to provide the same outputs that will occur with this project since a major component of expenditures is with technical assistance and training. Such inputs would probably not normally take place under other programs. Thus, during the initial phases it is expected that costs will be high.

The input costs have been analyzed to determine their adequacy for affecting the output. Decisions have been made as to whether more or less input costs would affect positively or negatively the outputs. Many

studies have been made in commodities and direct costs, equipment needs have been reduced to realistic proportions, so that the level of expenditure is relevant to achieve expected outputs. These costs are at a level so that a small increase in costs would not result in a proportionate increase in output, but a decrease in certain items (i.e., radio studio, tapes, production materials) could create bottlenecks which could adversely affect the project. Experimentation and trial are important components of the project to test alternative technologies and input combinations to get a more accurate reading of exact inputs needed in such a program.

The analysis also included an examination of the magnitude of resources and inputs required for the program on a longer-term basis. It was questioned whether the necessary cost inputs would be available once the pilot phase terminated. Since the overall MOE budget would not have to be increased, but rather only requires shifts within the Ministry, it is believed that the expansion program will function.

The future expansion of this pilot project is considered an integral part of planning now. Considerations are being made as to whether this project would likely be expanded economically and whether the MOE considers the pilot project an initial phase of a longer-range program. Realizing that Latin America is full of graveyards of abortive pilot projects long forgotten by the designers, the Mission has perceived from the beginning that, if initial phases are effective, from the outset a full-scale system should be viable on the basis of domestic support.

In writing this document, the Mission believes that the domestic support, both economically and morally, is present in Paraguay. This is based on the following considerations:

1. The MOE Tele-education program has existed for three years and has produced radio programs that are similar to those that will be in the pilot project. They have demonstrated competence in those efforts and have personnel with good experience to follow through in the pilot project.

2. A mind-set has been created that the pilot project, while experimental, is an expansion program and that it will continue over a long period of time. The planning for the pilot project has been conceived as a first step toward a broader program which is being rigorously designed and executed during the pilot phase.

3. The budget for the Tele-education program now is adequate for handling their limited program. The new budget for the expansion of the Tele-education program, including all components of the pilot project phase, has been approved by the MOE, meaning that both financial and personnel will be available.

4. The Minister of Education is 100% supportive of the project and has been kept abreast of all developments to date. The MOE is stable in personnel and no foreseeable changes will likely take place for the next few years.

The present budget of Tele-education for calendar year 1975 is $29,838. The GOP planned budget contribution for the pilot project in 1976 will be $58,200 and will remain at that level through 1978. In-kind contributions for the three years will total $85,000. (See Annex B, GOP inputs). These investments will require a budget increase of about 95% during the pilot project phase. The estimated budget for the MOE Tele-education Center to expand the pilot project into a program is $50,050 in 1979; $52,430 in 1980; and $40,514 in 1981.

The Replication Cost Analysis Table below estimates GOP costs for expanding the program after the pilot project phase through 1981. Further projections beyond six years were not made as they could become less accurate at that point. The assumptions of costs are detailed in the footnotes.

REPLICATION COST ANALYSIS TABLE

Year	(1) Personnel MOE MM	(2) Cost Personal MOE	(3) Admin-istration	(4) Production and Taping	(4) Studio Maint.	(5) Logist. Support	(6) Radio Time	(7) Recept. Costs	TOTAL
1979	144 (12)	33,800	2,000	5,000	1,000	4,000	3,000	1,250	$50,050
1980	144 (12)	37,180	1,500	4,000	1,000	4,000	3,500	1,250	$52,430
1981	96 (8)	27,264	1,500	3,000	1,000	3,000	3,500	1,250	$40,514

(1) Estimates that 12 MOE personnel will be required after pilot project phase for two years, decreasing to 8 in 1981. Production staffs will diminish.

(2) Assumes personnel increase salary 10% per year.

(3) Assumes capital costs annualized and needed support from MOE in Asuncion.

(4) Includes tapes, cassettes, visual material, and workbooks. Assumes decrease production costs each year due to stock of given programs.

(5) Includes travel, per diem, vehicle maintenance, and miscellaneous expenses.

(6) Cost estimated at 300 broadcast hours per school year at $10 per hour. Increase in broadcast time annualized.

(7) Assumes need for 50 new radio receivers per year at $25 per receiver. This could vary depending on number of students in programs.

The Table of Estimate Costs per Student below details number of students envisioned in the program 1976-81, costs per student per year, and cost per student hour. Unit costs per student are relatively high during the pilot project phase 1976-78, as is obviously expected, but diminish to expected costs during the expansion program 1979-81.

TABLE OF ESTIMATE COSTS PER STUDENT

Year	Budget	(3) No.Students	(4) Cost per Student/year	(5) Cost per Student hour
(1) 1976	$333,000	700	$475.71	$1.58
(1) 1977	$286,000	1,500	$190.00	$ .63
(1) 1978	$259,000	1,500	$172.66	$ .58
(2) 1979	$ 50,050	5,000	$ 10.01	$ .03
(2) 1980	$ 52,430	8,000	$ 6.55	$ .02
(2) 1981	$ 40,514	12,000	$ 3.37	$ .01

(1) Years 1976-1978 include AID funding. Budget is current figure in PP.
(2) Years 1979-1981 assumes no AID funding and uses budget estimated for those years.
(3) Assumes slow increase of student enrollment during pilot project phase but accelerated enrollment during expansion phase (1978-81).
(4) Cost per student is high during pilot phase due to experimental nature of project, commodity purchases, technical assistance, and curriculum development This decreases to regular costs during expansion phase. Assuming on-going costs of 1981, average cost per student would be lower if N = 15,000 $2.70
25,000 1.62
50,000 .81
100,000 .40
(5) Assumes 300 hours of programming per year for average student. Budget ÷ 300 ÷ No. students = cost per hour student.

In sum, this project has the potential to cut educational costs and extend educational opportunities to large audiences with a great economy of scale.

Part IV. Implementation Planning

A. Administrative Arrangements

1. Recipient

The project will be under the direction of the Director General of the Ministry of Education and will be implemented by the Department for Primary Education and the Center for Tele-education, with the participation of the Department for Plans and Programs, the Department for Production of Educational Materials, and the Service for Educational Guidance.

The core staff will be composed of 30 Ministry of Education employees who will be working full-time on the project and will remain permanent members of the Radio Education Staff after the pilot project is phased out. In addition to the permanent staff a number of short-term personnel will be utilized to set up the radio equipment, conduct the basic research, project evaluation and monitor the broadcasts. A complete list of personnel contemplated for the project is included in Annex B.

The Tele-education Center will have central responsibility for planning, producing, and implementing the day to day operations of the project. This Center has existed for three years and has produced 80 radio programs and 100 television programs. The current 20 member professional staff has demonstrated increasing professional capability to put together well-thought out designs for programs, good program content, and with adequate efficiency. The Director of Tele-education is a dynamic woman educator with professional experience in educational communications, and she receives excellent support within the MOE.

The pilot project, then, is an expansion of the present Tele-education program. The core staff of Tele-education will remain in their present positions and 10 full-time professional staff members will be assigned from the Primary School and Curriculum Departments within the MOE. They are MOE specialists in the four subject areas to be used in the project. Their addition will provide the technical expertise to write the radio scripts, develop innovative course outlines, and assure that the content of the radio programs are relevant to the needs of the target audience.

The present Tele-education Center budget for calendar year 1975 is $30,000. Its approved expanded budget for calendar year 1976 is $58,000. The additional $28,000 increase is to bring aboard the 10 additional staff members and to provide additional funds to support the additional work under the expanded program. These new staff members will be on board effective January 1, 1976. So, the new budget and expansion program has not required additional MOE funds, but is only a shift of funds

within the MOE. Two of the 10 additional staff members will work full-time in the Caaguazu Department as regional supervisors for this project. Their duties will be to visit the radio schools, recruit potential communities, distribute teaching materials and provide overall coordination of the project at the local level.

At the present time, the Tele-education Center occupies 5 offices on the second floor of an annex building of the MOE in downtown Asuncion. Beginning January, 1976, it will double its office space by occupying the entire second floor. These will be remodeled to provide efficient office space and professional environment. Mission advisors will be provided offices at the Center. The proposed studio facilities will be constructed in an open-air plaza area (25' x 45') on the ground floor in the same building. Thus, all expansions will be in MOE buildings and within the same places that they now exist.

The Center has minimal equipment and supplies to conduct their present operations. It is to their credit that they have scrambled to produce radio and TV programs with their minimal infrastructure. Yet, they have a VW station wagon, a tape recorder, a projector, a record player, and a small supply of tapes and cassettes that will be utilized until additional commodities provided by AID are available.

Tele-education is capable of taking on the additional responsibilities of the expanded pilot project. It will not have to get involved with intra-ministerial bureaucratic squabbling because it will have sole responsibility for implementing the project. At the same time, Tele-education has demonstrated to the Mission over the past three years, and especially recently in planning for this project, its ability to coordinate functions with other MOE organizations.

The Center has little, if any, capability to enter into contracts with national or foreign firms. Since the project will most likely require sub-contracting for professional services, it will require diligence and supervision by the Radio Education Specialist and the Mission. Likewise, the Center has weak administrative capability below the director level. There is no person capable or available within the Center to carry on the responsibilities of the director in her absence or departure. Thus, adequate provisions will have to be made by the Mission to assume proper contingency plans should her removal or absence for a long period of time take place.

2. AID

The project is not complex and will not present unusual administrative features nor necessitate additional AID staff commitments. AID proposes to disburse funds provided under the Project Agreement and for local cost expenditures using the following procedures:

a. Contracts will be awarded from PIO/T's to technicians and will be disbursed by USAID/Paraguay.

b. Commodities will be purchased by USAID/Paraguay.

c. The Tele-education Center and the Radio Education Specialist will prepare a budget for direct cost expenses to cover local cost expenditures. Upon approval by the USAID Director, the USAID Controller will advance the approved amount to the MOE's Tele-education Center.

B. Implementation Plan

Annex B contains a detailed Rural Radio Education Implementation Schedule; Annex D the Logical Framework Matrix; and Annex E the Project Performance Tracking Network Chart and Narrative. The logistical support has been described in Part III.B.

The Mission foresees no problems in negotiating or reaching agreement on details of the implementation plan. Project discussions have been collaborative with the host country agencies. There will be no AID waivers required for this relatively simple pilot project.

The pilot project will be monitored jointly by the MOE and USAID, with collaborative assistance from the contract personnel. Feedback mechanisms and evaluative techniques, which are described below, will be used to pinpoint critical performance indicators that have been achieved. These mechanisms will also serve to modify plans and to make corrections during the project.

The Project Performance Network identified 12 CPI's as part of the Project Performance Tracking (PPT) System. These will be milestones for determining the smooth functioning of the project, the ability to meet specific objectives, and plans that will help determine if the project is providing outputs that were intended. In most cases, these CPI's are key places in which determinations can be made if the project should continue. (See Annex E.)

C. Evaluation Plan

The pilot project will be evaluated in terms of the goals, performance objectives, and indicators for providing an educational service for the target group which has not completed school. Radio education evaluation techniques will test the learning process, determine errors and successes of the mass media project, and will permit comparative and controlled designs of the project's effectiveness and costs. The following evaluation instruments will be utilized:

1. Establishment of baseline data

General baseline data will be collected during the pre-broadcast design stage in order to determine specific decisions that should be made for the project design. Specific data will be collected about schools, target audience participants, drop-out rates, school enrollment figures, and other relevant data, so that specific target groups can be pinpointed and from which results can be measured. The data will also serve as a base for the continuous evaluation of the progress of the students participating in the outreach program.

Even though considerable information will be gathered during the Pre-Broadcast Design phase, it may be necessary to conduct further inventories on (a) major bottlenecks that might inhibit the further expansion and effectiveness of the project, (b) measures that facilitate the coordination of the project, (c) how best to use technology resources, (d) best ways to use financial resources, and (e) ways to assure smooth functioning of the pilot project. The process of producing the inventory should stimulate wide interest about the use of new educational technology and set a good foundation for setting the strategies and future plans of the project.

2. Pre-Test Audio and Visual Materials

Pre-tests will be conducted on both audio and visual materials before their use on a large scale. This will come after decisions have been made as to alternative technologies to be used, but will give more definite information about other curriculum development. There will be pre-testing of (a) radio programs of different length of times, (b) radio "novela" instruction vs. traditional lecture presentation, (c) radio programs presented with back-up of visual aids vs. those without visual aids, (d) radio programs with supporting materials and those without, (e) repetition rates of lessons and their correlation with learning, (f) feasibility of teaching Spanish language, social studies, mathematics, health and nutrition, (g) programmed instruction vs. non-programmed instruction, (h) levels of complexity of radio programs, (i) level of professionalism in presentation of program, (j) localness of program and its acceptance, and other factors deemed necessary.

Pilot tapes and accompanying supplementary instructional material will be pre-tested in the Caaguazu Department. Sample participants will be selected and tested under a rigorous experimental design. Results will be analyzed and, whenever necessary, more pre-tests will be conducted. Adjustments will be made before continuing on to the next phase of the project. The pre-testing phase will last approximately five months.

Concomitant with the pre-test of audio and visual materials will be informal "pre-tests" of (1) monitoring systems, (2) distribution systems, (3) administrative functions, (4) collaboration among organizations, and (5) trial runs of programs. In all cases, attempts will be made to simulate actual conditions as they will be so that the staff can anticipate problem areas beforehand. Qualitative judgments will be made about the most effective way to proceed.

3. Initial Survey Questionnaire

A questionnaire will be designed for all registrants in the study course. They will be asked, among other things, their expectations for the course, motivation for attending the course, reasons for previous drop-out from school, expectations about certification, and other factors.

4. Potential Student Survey

A random sample study of potential students in the target group will be conducted after six months from the initiation of the project. Determinations will be made about attractions of the project to these students, awareness of the project, reasons for not enrolling in the project, motivations about receiving out-of-school learning, and other relevant information. This should give information about dissemination techniques, corrections that could be made in planning, and possibilities for future expansion of the project.

5. Experimental Tests of Learning

Tests will be written, or adapted, to determine if learning is taking place as a result of the radio broadcasts. Besides these tests, students will be given examinations periodically in the subject matter areas to determine academic progress and to pass from one grade to another. The pilot project participants will most likely have to pass a final examination similar to students in the regular school system.

6. Impact Analysis

This analysis will be made to determine receptivity to the program in participating communities and schools and impact on utilization of community resources. The analysis will also help determine if the programs could be expanded to more grade levels, and if enrollment has expanded in the primary school. This analysis will be made to determine the adequacy of the outreach program as a means of providing a complete primary education and as an alternative to enrollment in the regular primary school.

7. Cost-Benefit Analysis

One component of the evaluation will be a cost-benefit analysis. Despite the paucity of usable cost data in Paraguay and the methodological problems involved in conducting cost-benefit analysis for such projects, the effort should be made. In considering the costs of radio education it will be important to take into account real economic costs (including opportunity costs), the internal efficiency of the project (cost effectiveness) and also the cost-benefit relationship (external productivity). When considering benefits, the analysis will go beyond simply assessing direct economic benefits, but will also pinpoint social and private benefits, which may be more important.

The economics of rural radio education must be considered in more global terms than simply costing and appraising the project. The analysis must transcend conventional cost-benefit calculations to include broader social, educational, and human goals. Our analysis will include, however, feasibilities for expanding the project on a national level, the potential cost advantages of a national rural radio education program, and the relationships between resource costs incurred and results attained.

8. Feedback

A feedback mechanism will be used to ensure that the messages are being perceived by the audience in the same way that they are intended. While many of these radio programs will have already been tested during the pre-testing phase, continued feedback will continue throughout the project. This will help determine if a loyal listening audience is being built up and whether the learning offered is relevant to the listeners needs. Using the feedback mechanism, program content will be adjusted to the results of the feedback. Different mechanisms such as the following will be used: 1) correspondence by listeners, 2) reports by monitors, and 3) interviews with students.

D. Conditions, Covenants and Negotiating Status

All necessary host country actions have been taken to execute this agreement. The MOE will be expected to provide the necessary personnel for the project, facilities, a site for the radio studio, regional supervisors, and other in-kind contributions. The MOE has approved Annex I, the draft of the Project Agreement, and is ready to sign the ProAg.

A N N E X E S

A. not applicable

B. Project Technical Details

1. Kinds of Inputs

2. Implementation Schedule

C. not applicable

D. Logical Framework

E. Project Performance Tracking Network Chart

F. not applicable

G. not applicable

H. not applicable

I. Project Description for Project Agreement

J. not applicable

ANNEX B: KINDS OF INPUTS - AID

1. Technical Assistance

Radio Education Specialist	36 MM	$162,000

Will provide the expertise in overall program planning, design and implementation of the new education techniques and will assist in training MOE personnel.

Radio Engineering Consultant	3 MM	12,000

Will assist in 1) selection of equipment and design of the broadcast studio, 2) analyzing existing technology and its function in the geographic zones in which this project will concentrate, 3) develop on-the-job training in operation and maintenance of equipment.

Research and Evaluation Specialist	11 MM	44,000

Will design and set-up research and evaluation criteria for data base collection, some pre-testing experimental designs, conduct the evaluation procedures and cost benefit analyses. He will train and supervise the MOE personnel in evaluation.

Radio Curriculum Specialist	6 MM	24,000

Will serve project with curriculum development input for radio script preparation, advise on proper radio/communication techniques, and conduct on-the-job training for MOE personnel.

$242,000

2. Commodities

a. Studio facilities (radio and sound reproduction equipment)	$ 20,000
b. 10 portable tape recorders	1,000
c. 50 medium-sized radios	5,000
d. 500 tape cassettes	1,000
e. 30 record players	1,000
f. 2,000 7 x 2" tapes	10,000

g. 1 offset multilith printing machine	$ 10,000
h. Materials and supplies for production of instructional materials	25,000
i. Maintenance parts for all equipment	1,000
j. Paper for workbooks and teachers' guides	20,000
k. 6 typewriters	1,000
l. Records (500)	3,000
	$ 98,000

3. Participant Training — 40 MM — $ 54,000

Short-term in various aspects of rural radio education, curriculum development, and administration (visits to U.S., Mexico, Guatemala, and Colombia)

4. Other Costs

a. Local travel for project team members for pre-testing, testing, and evaluation

people		trips		$			$ 9,000
(10	x	20	x	15	x	3 years)	

b. Per diem project team members for pre-testing, testing, and evaluation

people		days		$			36,000
(20	x	40	x	15	x	3 years)	

c. Local contract services for training Paraguayan team members, in communication techniques and evaluation

9 weeks training at $1,000 — 9,000

d. Local purchase supplies and materials for training at $3,000 per year — 9,000

e. Local purchase supplementary instructional materials at $5,000 per year — 15,000

f. Local costs for servicing radios and recording equipment at $2,000 per year — 6,000

g. Office equipment and supplies	$ 15,000
h. Sub-contract evaluation research organizations for baseline studies, testing, and evaluation	20,000
i. Computer services for key punching and processing	10,000
j. Vehicle operation (gasoline and maintenance)	10,000
k. Transfer services tapes to cassettes for pre-testing	2,000
l. Installation of radio broadcasting facilities (emergency costs only)	3,000
m. Contract local services for script writing, curriculum development, material production, and radio production	58,000
n. Contingencies	5,000
	$207,000

Summary Costs

U.S. Technical Assistance	$242,000
Commodities	98,000
Participant Training	54,000
Other Costs	207,000
TOTAL	$601,000

Rural Radio Education Costs Work Sheet

	Total MM	FY 76	FY 77	FY 78	TOTAL
1. Technical Assistance					
a. Rural Ed.Specialist	36 (12)	54 (12)	54 (12)	54	162
b. Radio Eng.Consult.	3 (2)	8 (1)	4	--	12
c. Research & Ev.Spec.	11 (5)	20 (3)	12 (3)	12	44
d. Radio Curric.Spec.	6 (2)	8 (2)	8 (2)	8	24
	56	90	78	74	242

	FY 76	FY 77	FY 78	TOTAL
2. Commodities				
a. Studio facilities	15	5	--	20
b. Tape recorders	1	--	--	1
c. Radios	5	--	--	5
d. Tape cassettes	1	--	--	1
e. Tapes	5	3	2	10
f. Record player	1	--	--	1
g. Offset printing machine	10	--	--	10
h. Materials	10	10	5	25
i. Maintenance parts	--	1	--	1
j. Paper	5	10	5	20
k. Typewriters	1	--	--	1
l. Records	1	1	1	3
TOTAL	55	30	13	98
3. Participant Training				
Short-term training	18	18	18	54
4. Other Costs				
a. Local travel	3	3	3	9
b. Per diem	12	12	12	36
c. Local training	3	3	3	9
d. Local purchase supplies	3	3	3	9
e. Supplementary materials	5	5	5	15
f. Broadcasting costs	5	5	5	15
g. Servicing radio	2	2	2	6
h. Office equipment	10	4	1	15
i. Evaluation organization	8	5	7	20
j. Computer services	4	2	4	10
k. Vehicle operation	--	1	1	2
l. Transfer tapes	2	--	--	2
m. Installation facilities	1	2	--	3
n. Contract services	20	20	16	56
TOTAL	78	67	62	207

Funding Requirements - Rural Radio Education

Funding by Fiscal Year	Total	Personnel	Commodity	Participant Training	Other Costs
FY - 76	241	90	55	18	78
FY - 77	193	78	30	18	67
FY - 78	167	74	13	18	62
	601	242	98	54	207

ANNEX B: GOP INPUTS

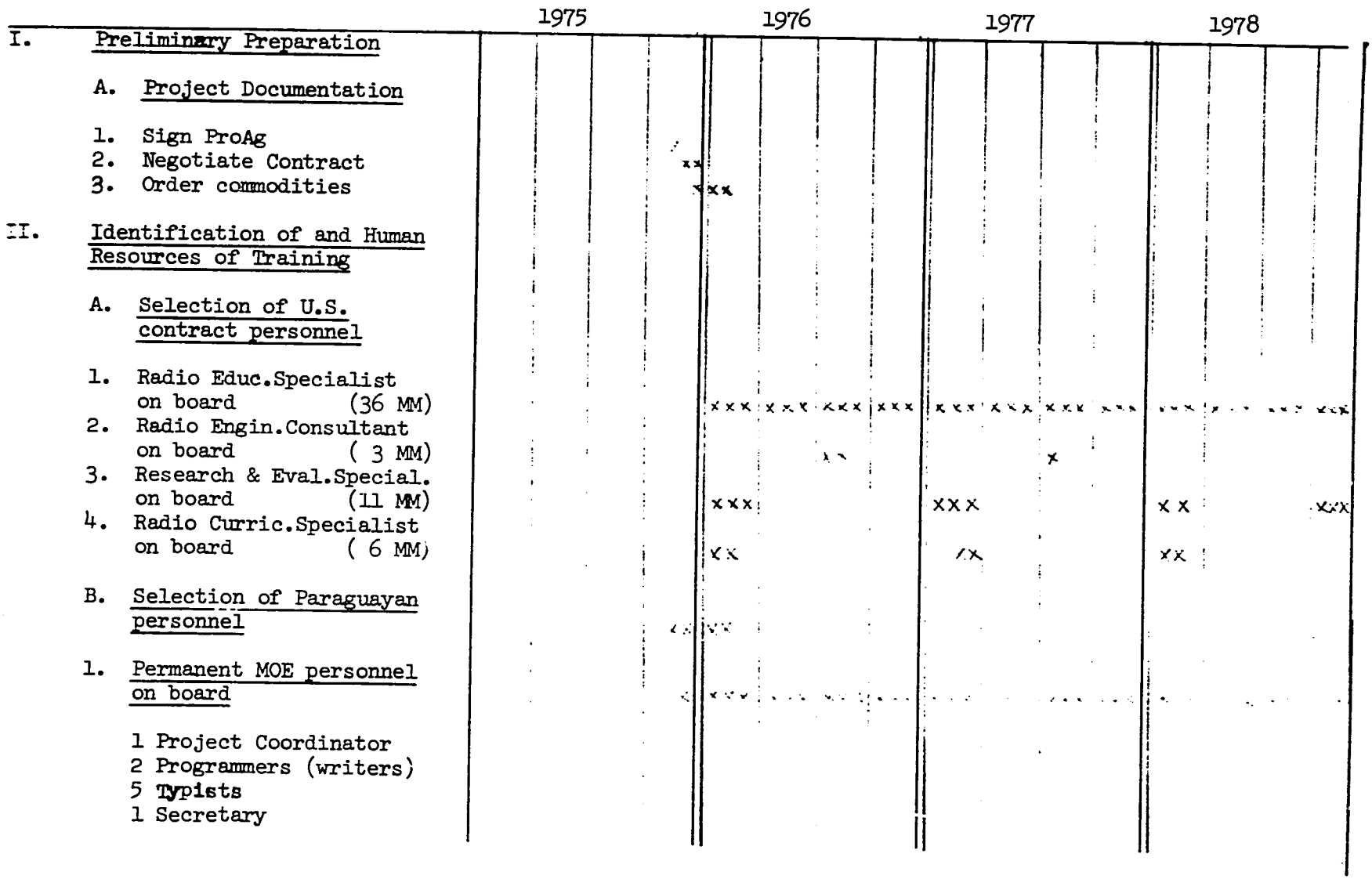
			Tele-education MM	US$
A.	Permanent Personnel			
	Project Coordinator	(1)	36	9,000
	Programmers	(2)	72	10,000
	Typists	(5)	180	27,000
	Executive Secretary	(1)	36	5,400
	Curriculum Specialists	(4)	144	28,800
	Production Specialists	(4)	144	28,800
	Visual Material Specialists	(2)	72	10,800
	Curriculum Coordinator	(1)	36	7,200
	Script Writers	(2)	72	10,800
	Radio Actors	(2)	72	10,800
	Radio Technician	(1)	36	7,200
	Sound Mixer	(1)	36	4,200
	Service Personnel	(4)	144	15,000
				175,000
B.	Ministry of Education			
	Field Researchers	(3)	9	1,800
	Regional Supervisors	(5)	78	11,700
	Primary School Teachers	(35)	35	3,500
				17,000
C.	Other (In-kind Contribution)			
	Central Administration Overhead			5,000
	Vehicles			3,000
	Installation Radio Broadcasting Equipment			5,000
	Training of Personnel			4,000
	Monitors			63,000
	Radio Broadcast Time (Radio Caaguazu, Radio Guaira, Radio Centenario) and Radio Studio Recording Facilities (Radio Charitas)			5,000
				85,000

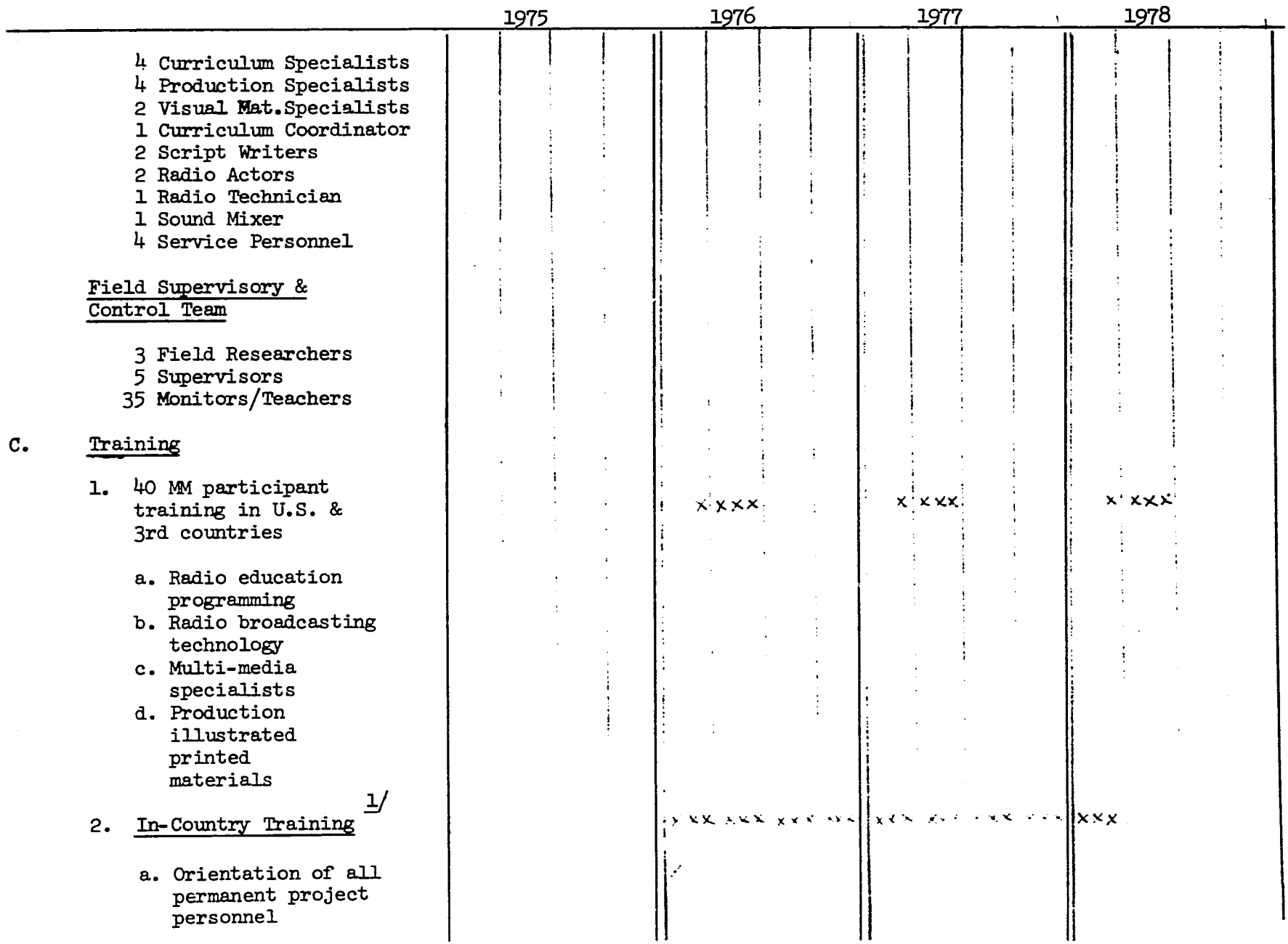
Summary Costs

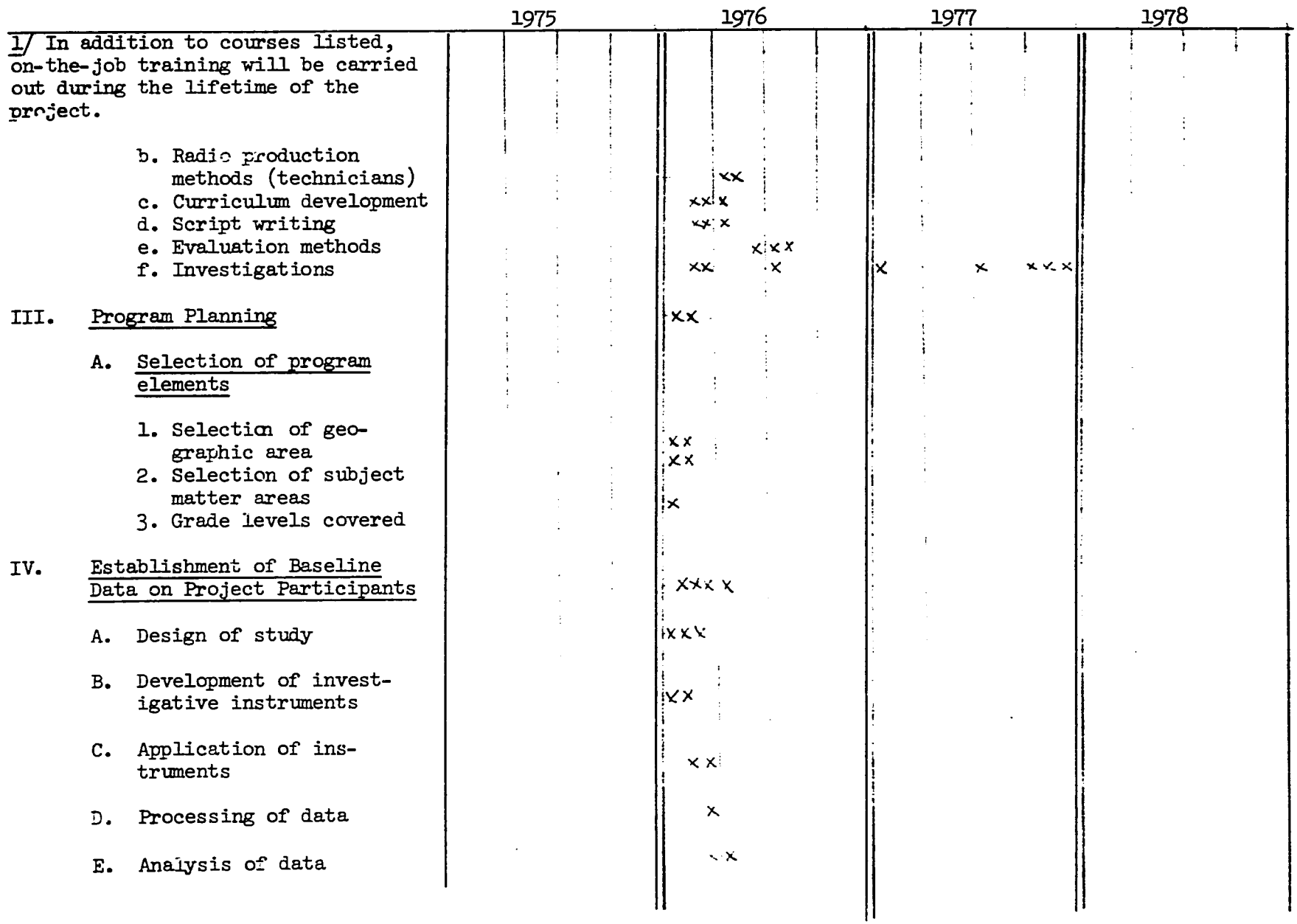
Permanent Personnel	US$175,000
Ministry of Education	17,000
Other	85,000
TOTAL GOP	US$277,000

ANNEX B

RURAL RADIO EDUCATION IMPLEMENTATION
SCHEDULE




1975
1976
1977
1978
4 Curriculum Specialists
4 Production Specialists
2 Visual Mat.Specialists
1 Curriculum Coordinator
2 Script Writers
2 Radio Actors
1 Radio Technician
1 Sound Mixer
4 Service Personnel
Field Supervisory & Control Team
3 Field Researchers
5 Supervisors
35 Monitors/Teachers
C. Training
1. 40 MM participant training in U.S. & 3rd countries
a. Radio education programming
b. Radio broadcasting technology
c. Multi-media specialists
d. Production illustrated printed materials
2. In-Country Training 1/
a. Orientation of all permanent project personnel



1/ In addition to courses listed, on-the-job training will be carried out during the lifetime of the project.

b. Radio production methods (technicians)
c. Curriculum development
d. Script writing
e. Evaluation methods
f. Investigations

III. Program Planning

A. Selection of program elements

1. Selection of geographic area
2. Selection of subject matter areas
3. Grade levels covered

IV. Establishment of Baseline Data on Project Participants

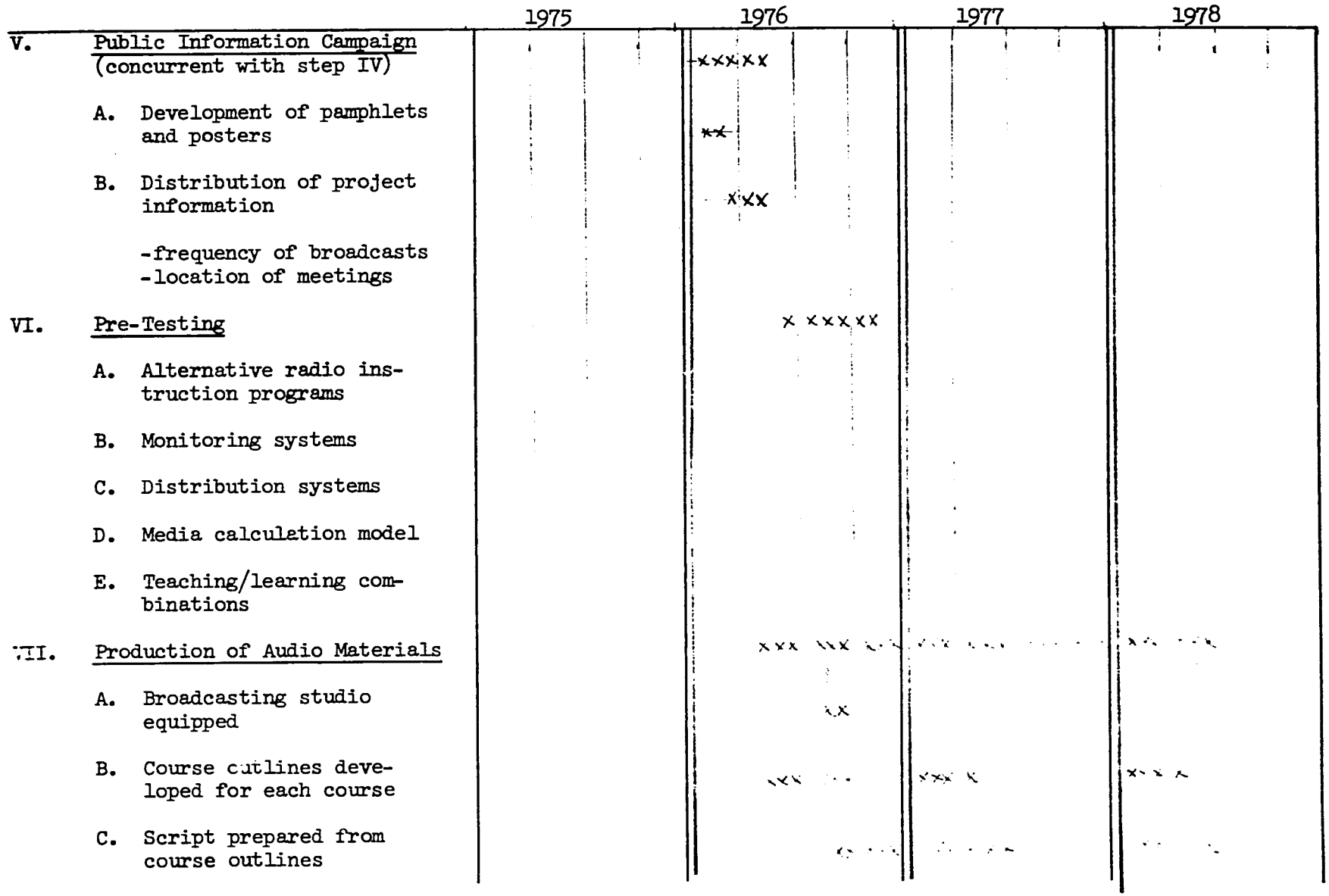
A. Design of study

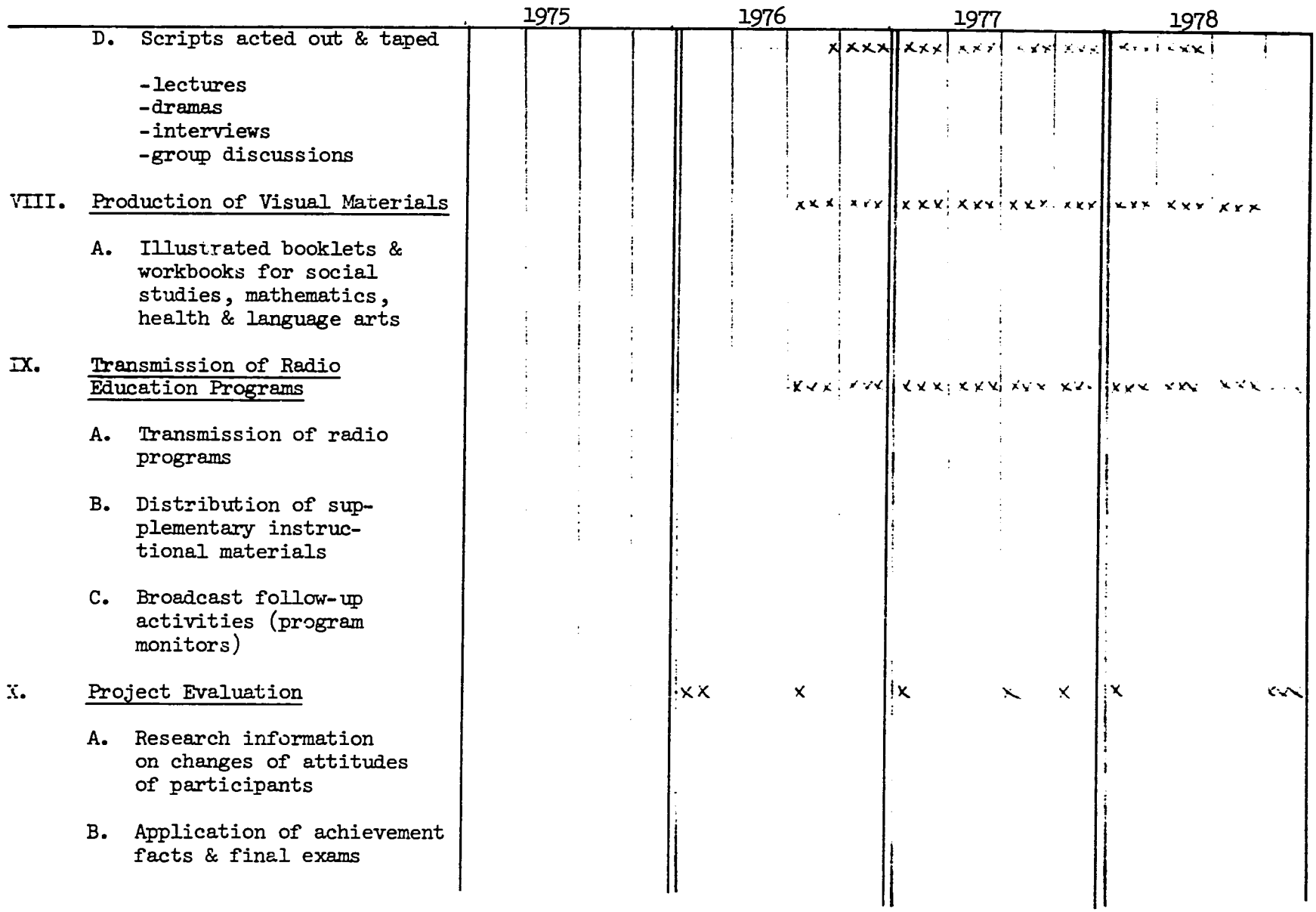
B. Development of investigative instruments

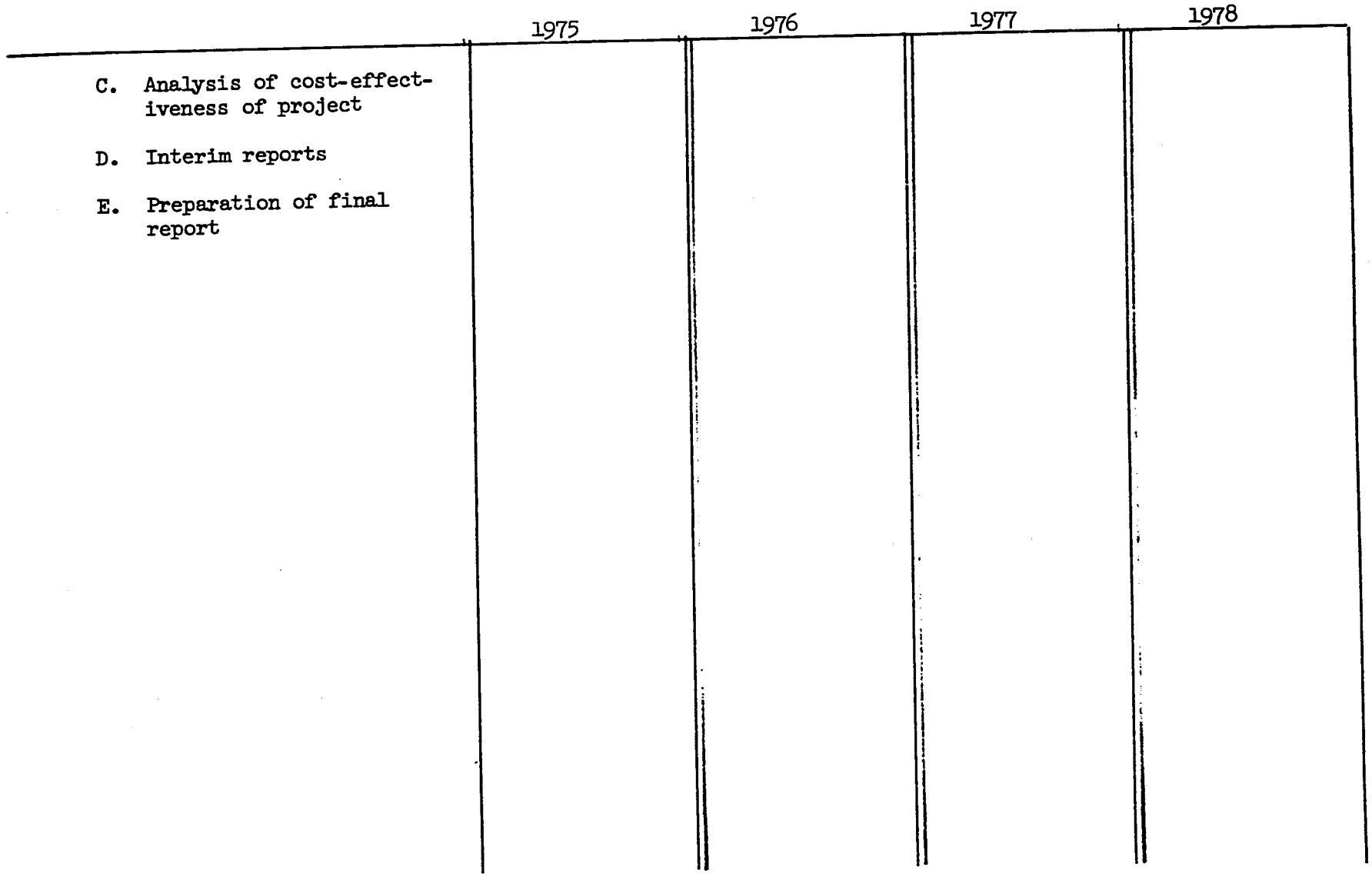
C. Application of instruments

D. Processing of data

E. Analysis of data


1975
1976
1977
1978
V. Public Information Campaign (concurrent with step IV)
A. Development of pamphlets and posters
B. Distribution of project information
-frequency of broadcasts
-location of meetings
VI. Pre-Testing
A. Alternative radio instruction programs
B. Monitoring systems
C. Distribution systems
D. Media calculation model
E. Teaching/learning combinations
VII. Production of Audio Materials
A. Broadcasting studio equipped
B. Course outlines developed for each course
C. Script prepared from course outlines


1975
1976
1977
1978
D. Scripts acted out & taped
-lectures
-dramas
-interviews
-group discussions
VIII. Production of Visual Materials
A. Illustrated booklets & workbooks for social studies, mathematics, health & language arts
IX. Transmission of Radio Education Programs
A. Transmission of radio programs
B. Distribution of supplementary instructional materials
C. Broadcast follow-up activities (program monitors)
X. Project Evaluation
A. Research information on changes of attitudes of participants
B. Application of achievement facts & final exams


1975
1976
1977
1978
C. Analysis of cost-effectiveness of project
D. Interim reports
E. Preparation of final report

AID 1020-28 (7-71)
SUPPLEMENT I
ANNEX D

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

(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: RURAL RADIO EDUCATION 526-0109

Life of Project:
From FY 1976 to FY 1978
Total U. S. Funding $601
Date Prepared: September 25, 1975

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes:	Measures of Goal Achievement:		Assumptions for achieving goal targets:
To expand access to primary education in rural areas of Paraguay.	1. The access to additional years of primary education in the Department of Caaguazú increased by 15% from 1976 to 1978.	1. MOE records	1. Rural teachers will actively cooperate in the project.
	2. Substantial increase in the percentage of primary school graduates in the Department of Caaguazú from 1975 to 1978.	2. MOE and USAID sample survey and follow-up in FY 1977.	2. Rural students and drop-outs will take advantage of the educational opportunities offered by the project.

AID 1020-26 (7-71)
SUPPLEMENT I

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1976 to 1978
Total U.S. Funding $601
Date Prepared: September 25, 1975

Project Title & Number: RURAL RADIO EDUCATION 526-

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose:	Conditions that will indicate purpose has been achieved: End of project status.		Assumptions for achieving purpose:
1. Develop MOE capability to provide radio instruction to a greater percentage of the rural population	1. MOE staff completed preparing instructional tapes for use by government and private radio stations for 4-6 grades.	1. MOE and Mission Education Office reports.	1. That MOE's Department for Plans and Programs, Department for Production of Educational Materials, and Service for Vocational Education, will cooperate with the Department of Primary Education and Center for Tele-Education in developing and implementing the project.
2. Experiment with different methodologies and techniques to provide rural primary school education through the use of radio.	2. MOE staff completed preparing back-up materials such as workbooks and teachers' guides for 4-6 grades using rural curriculum.	2. An end of project evaluation to be performed by contract and/or AID/W personnel.	
3. Find out what institutional mechanisms help make rural radio programs feasible and more effective.	3. MOE has a feedback and evaluation system to determine the effectiveness of its radio activities and has submitted reports on findings.	3. Interim reports every 6 months analyzing findings and prescribing modifications written by MOE.	
	4. A national education plan which includes radio education as a means of offering education opportunities.		
	5. 1,500 elementary school children who attended incomplete schools participating in supervised radio education programs.		

AID 1020-2B (7-71)
SUPPLEMENT I

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1976 to FY 1978
Total U.S. Funding $501
Date Prepared: September 25, 1972

Project Title & Number: RURAL RADIO EDUCATION 526-0109

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	**Magnitude of Outputs:**		**Assumptions for achieving outputs:**
1. Recording studio equipped to produce radio programs for nationwide use.	1. MOE studio has sufficient equipment to record courses for use by government and private radio stations. Basic equipment includes tape recorders, microphones tapes, etc.	1. MOE and Mission Education Office reports.	1. That returned participants will work in the activities in which they were trained.
2. Participant training, short-term training, and on-theOjob training required to upgrade the MOE personnel	2. Trained staff: a. Permanent central staff - 30 b. Technical part-time staff - 43 c. Program monitor - 35	2. Interim reports submitted every 6 months.	2. That GOP and USAID inputs fulfill their inputs as planned.
3. Designed, tested, written, produced new curriculum and courses for radio broadcasting for four subject matters and for three grade levels, using both audio and visual instructional materials.	3. Courses of study transcribed on tapes for four subject matter areas and for three grade levels (grades 4 to 6). a. Spanish language (including instruction in Guarani) b. Social studies c. Mathematics d. Health and nutrition	3. Informal feedback mechanisms.	
4. System developed, tested and functioning for transmitting radio programs, organizing classes, & monitoring radio classes in one Paraguayan department.	4. 1,500 students enrolled in radio schools after 3rd year and 70 "schools" functioning.	4. Final end of project report.	
5. Research, baseline data, testing and evaluation instruments and techniques designed and used to asses learning and success of project.	5. Evaluation instruments adequate to determine the degree of listener interest, and understanding of radio instruction, degree of learning, and capable of identifying need for changing the instruction being presented.		

AID 1020-28 (7-71)
SUPPLEMENT 1

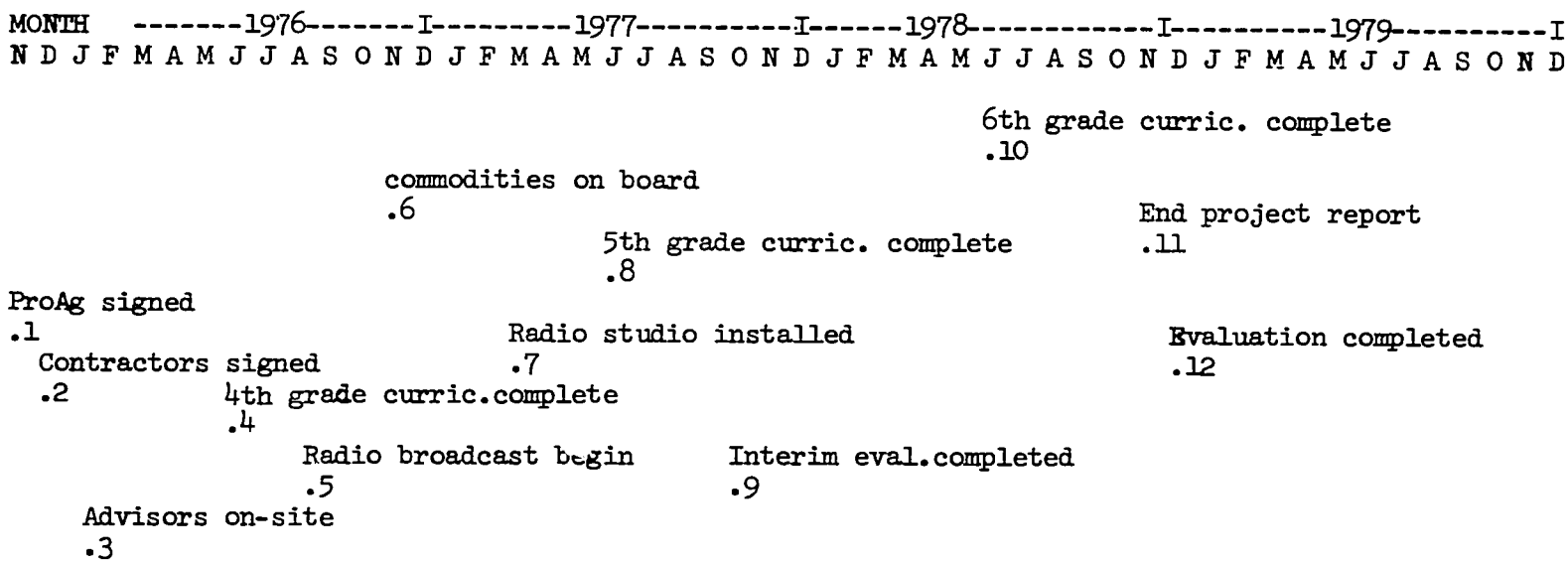
PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1976 to FY 1978
Total U.S. Funding $601
Date Prepared: September 25, 1972

Project Title & Number: RURAL RADIO EDUCATION 526-0109

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:	Implementation Target (Type and Quantity)		Assumptions for providing inputs:
1.			
1. Personnel — FY 76: 90, FY 77: 78, FY 78: 74	1. Long term radio education technology specialists 36 MM Radio engineering consultants 3 MM Evaluation consultant 11 MM Radio curriculum specialist 6 MM	Reports of Mission Education Division and Mission Controller.	That qualified consultants can be contracted to work in the desired time frame.
2. Participants — FY 76: 18, FY 77: 18, FY 78: 18	2. 18 MM per year of short-term training in the U.S. and third countries in communication and evaluation.		
3. Commodities — FY 76: 55, FY 77: 30, FY 78: 13	3. Recording studio equipment, tapes and reproduction equipment and supplies for workbooks and guides.		
4. Other Costs — FY 76: 78, FY 77: 67, FY 78: 62	4. Local travel and per diem of project team members, local contract services for in-country training in communication and evaluation, local contracts for project evaluation, supplies and materials.		
TOTAL COSTS — FY 76: 241, FY 77: 193, FY 78: 167			

ANNEX E: PROJECT PERFORMANCE NETWORK



Financial Plan	X 180	X 85	X 100	X 85	X 110	X 65
Evaluation Plan		X	X	X	X	X

ANNEX E: PROJECT PERFORMANCE TRACKING NETWORK NARRATIVE

COUNTRY:	PROJECT No.	PROJECT TITLE:	DATE:	X ORIGINAL	APPROVAL:
PARAGUAY	526-0109	RURAL RADIO EDUCATION	9/25/75	___ REVISED	

CPI NARRATIVE

1.	11/1/75	ProAg and PIO/T signed
2.	12/1/75	Personnel services contracts signed
3.	1/1/76	Advisors on-site (project begins)
4.	6/1/76	Production materials 4th grade curriculum complete
5.	8/1/76	Begin radio broadcasts
6.	11/1/76	Important commodities on board
7.	3/1/77	Radio studio installed
8.	4/1/77	Curriculum 5th grade complete
9.	10/1/77	Interim evaluation and achievement testing completed
10.	4/1/78	Curriculum 6th grade complete
11.	10/15/78	End of project report
12.	11/1/78	Evaluation completed

ANNEX I: PROJECT DESCRIPTION FOR PROJECT AGREEMENT

I. Introduction

This Project Agreement is entered into between the Ministry of Education and Worship (hereinafter referred to as the "Ministry"), represented by the Minister, Dr. Raul Peña; and the Agency for International Development through its Mission to Paraguay (hereinafter referred to as "USAID"), represented by its Director, Mr. Oliver L. Sause.

II. Objectives

The objectives of this project are to provide radio instruction to a greater percentage of the rural population, experiment with different methodologies and techniques to provide rural primary education through the use of radio, and institutionalize mechanisms to make rural radio programs feasible and effective.

The principal support provided by this project will be in technical assistance to plan and implement the project, participant training to upgrade Ministry personnel in radio education, commodities necessary to produce and transmit new primary school curriculum adapted for the radio, and support for local groups, individuals, and costs necessary to efficiently implement the project.

Ministry personnel will plan, write, and produce radio education programs that will be transmitted over local radio station(s) to reach potential primary school students. Local incomplete primary schools and other community locales will be radio listening centers. The pilot project will experiment both different methodologies and techniques to provide rural primary school education and institutional mechanisms that make rural radio programs feasible. Pilot project results will demonstrate what content and learning can take place via radio and what infrastructure possibilities there are for expansion into a long-range program.

The project is designed particularly for those out of school children that have had at least three years of primary schooling but were not able to complete their elementary education because schools which they attended had less than 6 grades. It is also designed for drop-out students who left school before completing the 6th grade and who, for several different reasons, are unable to attend a regular primary school.

The Ministry will develop a radio instructional program, with appropriate visual and instructional materials, that follows the revised rural primary school curriculum. Radio programs and classes will be offered for the 4th grade in Spanish language, social studies, health and nutrition, and mathematics.

Radio programs will be transmitted over a local radio station in Caaguazu Department. Transmissions will be daily and will take place during the regular school year.

The Ministry will organize about 70 radio listening classes in regular incomplete primary schools and in "out-of-school" listening centers such as homes and community centers. Radio classes in incomplete primary schools will be monitored by about 35 regular primary school teachers and parents. Classes in listening centers will be monitored by about 35 parents, community leaders, and teachers. Approximately 700 students will be enrolled in the specially formed radio schools.

The Ministry will provide instructional materials, teachers' guides, and appropriate visual aids to accompany the radio program broadcasts. In some cases, they will also distribute AID-funded radio transmitters. The Ministry will supervise the radio classes with local regional supervisors and will also provide in-service training for the monitors and teachers. It will follow a rigorous implementation schedule for production, distribution, monitoring, testing, and evaluation.

III. Project Implementation

A. Pre-Testing

The Ministry will prepare and survey various alternative radio instruction programs to determine the applicability and validity of radio instruction in rural Paraguay sectors. This testing will assure that radio programs developed are perceived by the target group in the same way that they are perceived by the Ministry. This pre-testing will last approximately 6 months and will probably include: (1) in-depth baseline data surveys to determine local and regional attitudes and behavior patterns so that program content will be relevant to the local educational situation; (2) surveys of different possible monitoring systems; (3) studies of administrative aspects of the project including admission of students, certification, time requirements, examination requirements; (4) testing of distribution systems for instructional materials; (5) testing different teaching-learning system combinations; and (6) testing the kinds of programs that could be learned more effectively from radio in Paraguay.

B. Logistical Arrangements

The Ministry will set-up logistical arrangements for radio classes which will include: (1) a monitoring system whereby radio schools will be organized in Caaguazu Department and appropriate monitors established for the schools; (2) a distribution system in which instructional materials are distributed systematically from production headquarters to the radio schools; (3) arrangements with a local radio station(s) to provide local transmission of the radio classes regularly; (4) arrangements for producing radio programs

through a local radio station. These logistical arrangements will provide the necessary input to assure that the programs run smoothly.

C. Curriculum Development

After pre-testing results are in, the course outlines will be developed for the four courses offered for the 4th grade. Courses will be broken down into segments and will include: (1) the objectives of the course; (2) procedures or ways that will be used to achieve the objectives and the follow-up activities planned for the field; (3) expected outcomes to be achieved by the learner as a result of this course; and (4) how the student will be evaluated to determine whether he has adequately completed the course. Each subject will be designed for approximately 15-20 minute duration for each day and there will be 4 courses each day. There will be approximately 180 days of radio programs for each course, which will constitute a course for a given school year.

Visual and printed materials will be designed to accompany the radio programs for each course. Visual materials will include maps, charts, diagrams, and pictures. Printed materials will include student workbooks, teachers' guides, and other textbooks.

D. Evaluation

The baseline data collected in the pre-project design stage give specific information for the continuous evaluation of the progress of students participating in the program. A survey of participating students will be conducted periodically to determine their expectations and opinions about the course. A student survey will be conducted to find out reasons why potential students do not take advantage of the radio programs. A cost-benefit analysis of the project will take place to determine the real economic costs, internal efficiencies, and the cost-benefit relationships of the project.

An experimental research design will be set-up and administered to test learning taking place with the radio programs. A rigorous experimental/control design will be used to test and control certain key variables so that determinations can be made of learning taking place.

IV. Financial Obligations

A. USAID

The sum of $241,000 will be provided for the following:

Contract Services Services for a Radio Education Specialist to serve as project advisor (12 MM), one Radio Engineering Consultant to help install the radio studio	$ 90,000

facility (2 MM), one Research and Evaluation Specialist to set-up and supervise the baseline data study and the evaluation mechanisms (5 MM), and one Radio Curriculum Specialist to provide technical assistance in curriculum development (2 MM).

Commodities $ 55,000

1. A studio facility for recording, mixing, and reproducing the radio programs.

2. Tape recorders, typewriters, records, radios, tape cassettes, record players, tapes needed for pre-testing and producing radio programs.

3. An offset/multilith printing machine for reproducing instructional materials, visual materials, workbooks, and teachers' guides.

4. Paper and materials for production of instructional materials.

Participant Training $ 18,000

Short-term in various aspects of rural radio education, curriculum development, and administration.

Other Costs $ 78,000

1. Local travel and per diem for project team members to conduct the pre-testing and evaluations.

2. Local contract services for training team members in communication techniques and evaluation.

3. Local purchase of supplies and materials for training.

4. Local broadcasting costs, servicing costs, and transfer to tape services.

5. Office equipment and supplies.

6. Contracting for local services in script writing, curriculum development, material production, radio production, baseline data collection, testing of radio programs, and evaluations.

Variation of 20% among the above components can be made with the concurrence of the USAID and the Ministry without formal amendment to this Project Agreement, provided that the total of $241,000 is not exceeded.

B. Ministry

The sum of $92,000 will be provided in direct contribution and in-kind contribution as follows:

Ministry of Education (In-kind Contribution) $ 28,000

1. Provide office facilities for central administration of project and location for installation and site of Ministry radio studio; office space and facilities for advisory specialists.

2. Provide construction workers and small materials for installation of studio.

3. Provide Ministry vehicles for city movement and pre-testing, testing, and evaluating the project.

4. Provide locale for training of Ministry personnel, primary school teachers, and monitors.

5. Provide and supervise approximately 35 volunteer monitors for community listening centers.

6. Provide local radio studio facilities to produce and record radio programs for pre-testing and for initial radio programs (approximately 9 months) until radio studio is installed.

Tele-education Center of Ministry $ 58,000

Will provide one project coordinator, 2 programmers, 5 typists, 1 executive secretary, 4 curriculum specialists, 4 production specialists, 2 visual material specialists, 1 curriculum coordinator, 2 script writers, 2 radio actors, 1 radio technician, 1 sound mixer, and 4 service personnel. These will work full-time on the project for the entire year beginning January 1, 1976.

Ministry of Education - Primary Department $ 6,000

The Primary Department of the Ministry will provide 2 regional supervisors full-time for the

project who will live in Caaguazu Department; 3 regional supervisors who will work part-time and who live in Caaguazu Department; and approximately 35 primary school teachers who will monitor radio schools held in incomplete primary schools in Caaguazu Department.

The Primary School Department will provide on-going advice as is needed.

Cleared by: EO:NFHolz

PO:WPSchoux

CON:DBBarrigan

UNCLASSIFIED