

**REPRODUCTIVE HEALTH EDUCATION IN INDIGENOUS AREAS  
THROUGH BILINGUAL TEACHERS IN GUATEMALA**

Prepared by

Gloria Cospín  
Asociación Guatemalteca de Educación Sexual  
y Desarrollo Humano (AGES)

and

Ricardo Vernon  
The Population Council/INOPAL III project

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## SUMMARY

The Mayan population, which represents 40% of the total population, is the most under-served in terms of all kinds of health care. Its access to reproductive health services and information is very limited. The conventional wisdom is that there is near universal rejection of any kind of family planning in this population, but studies have shown that Mayan men and women are aware of the deleterious effects of having too many children and having children too closely spaced. Although several institutions are currently trying to develop models for providing culturally acceptable reproductive health services to the indigenous population, so far only modest results have been obtained. In large part, this has been a consequence of the inability of institutions to incorporate in their programs Mayan staff who can conduct activities in a Mayan language, who live in the indigenous communities and who have the required teaching and learning skills.

In this project, AGES designed and tested a strategy for providing reproductive health education to indigenous audiences in Guatemala. The strategy consisted in using teachers of the National Bilingual Education Program (PRONEBI) to teach reproductive health courses in indigenous communities. Briefly described, as part of the strategy:

- a) AGES developed three 10-hour courses or "modules" that PRONEBI teachers could teach in their communities: birth spacing; pregnancy, birth and gender; and mother and baby care;
- b) PRONEBI teachers in the departments of Chimaltenango, Quetzaltenango and San Marcos were invited to participate in the Reproductive Health Education System. To participate on the system, teachers had to pass a written examination based on a list of readings, and attend a 12-hour training course for each module. Once the teacher passed the exam and attended the training course, he was considered to be "certified" to teach the module;
- c) Certified teachers assembled groups and taught the courses in their communities. At the end of the course, they were paid 125 quetzales (US \$ 22) for each 10-hour reproductive health course taught in indigenous communities in the local indigenous language.

A total of 55 teachers completed the full process of examination, training and giving at least one course. A total of 496 courses for 11,171 students were taught in a seven month period. No major negative incidents were reported. The students reported liking the course. The contraceptive prevalence rate of married participants increased by at least three percentage points after the course (equivalent to an increase of 18% in use of all methods, and of 40% in the use of modern methods). Sixty five percent of those not married or in union not yet using methods said they expected to use a family planning method in the near future. The cost per course was US \$56.40, and per student US \$2.50.

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## I. BACKGROUND

### 1.1 Population and Reproductive Health in Guatemala.

Guatemala has a crude birth rate of 36, second only to Belize's in the Americas (Population Reference Bureau, 1996). The total population is estimated at 10 million, of which 60% are Spanish speakers (locally called *ladinos*) and 40% are speakers of one of the 23 Mayan languages spoken in Guatemala. The Indigenous population is statistically much worse off than the Ladino population in just about every social and health indicator.

With regards to contraception, the 1995 Maternal-Child Health National Survey found a prevalence of 10% for Mayans and of 40% for Ladinos. The Mayans obviously have much more limited access to health services, both physically and culturally. Beyond that, although the conventional wisdom is that Mayans reject family planning, studies have shown that Indigenous women are aware of the deleterious effects of having too many children and having children too closely spaced. Several qualitative studies have also found an almost universal desire to know more about birth spacing, specially of natural methods (modern methods are distrusted and referred to as "artificial.") (Rosenhouse et al, 1989; Ward et al, 1990; Ward et al, 1992; Toj et al, 1995; Pineda et al, 1995). The problem, therefore, is to find ways to provide culturally acceptable reproductive health services to a population which has a clear need for services.

### 1.2 AGES

The Asociación Guatemalteca de Educación Sexual y Desarrollo Humano (AGES) is a private, non-profit institution founded in 1978 in order to provide culturally appropriate sex education and reproductive health services and information. AGES main offices are located in Guatemala City, and it has offices in the Departments of Chimaltenango, Quetzaltenango and San Marcos.

AGES current main activities include: a) sex education courses and workshops for different audiences such as children, teenagers, parents, indigenous populations, etc; b) development of sex education and reproductive health information, education and communication (IEC) materials, both in Spanish and in Mayan languages; c) scholarships for Mayan girls: using a gender approach, this program gives direct economic aid to indigenous Mayan girls to attend primary, secondary or vocational school and gives monthly talks to their parents and community leaders; d) an adolescent peer promotion program: AGES trains and provides support to adolescent promoters who provide their peers information on sexuality, reproductive health, contraception and prevention of sexually transmitted diseases, including AIDS; and e) a program for homeless girls to bring gender and reproductive health education to 60 girls in Guatemala City in order to modify high risk sexual behaviors.

One of the main interests of AGES is achieving financial self-sufficiency to conduct its projects. Currently, AGES covers around 40% of its financial needs by means of a publishing department, library services and sales and rent of audiovisual material such as slides, videos and films.

## II. PROBLEM STATEMENT

Studies that have used qualitative methodologies have found among indigenous Guatemalans a negative attitude towards family planning but a clear awareness of the benefits of birth spacing, limited knowledge of contraception and even lower knowledge of contraceptive sources. The 1987 MCH National Survey found that 22.7% of married women of fertile age had an unmet need for contraception (non-pregnant sexually active women who do not want a children in the near future but who are not using contraception). However, less than four percent stated that they planned to use contraception in the future. In short, the conditions in indigenous Guatemala could be described as one of fragile demand for contraception and fragile supply of appropriate services.

Despite the desire that many health service providers have of overcoming the neglect of the indigenous population, it is clear that they still need to learn how to provide culturally appropriate services for the Mayans. For example, APROFAM, the Guatemalan affiliate of the International Planned Parenthood Federation, sought between 1991 and 1996 to improve services in the Department of Quiche by training service providers and traditional community health agents, recruiting indigenous staff and volunteers, setting up enlarged distribution systems and conducting IEC campaigns in Quiche language. Despite the very large effort, only modest results seemed to have been achieved. Likewise, in 1987-1988, AGES implemented an INOPAL operations research project to test a sex-education course for indigenous couples. Although AGES emphasized a careful pre-intervention diagnostic study in the communities to detect the topics of interest, AGES had to stop the course in the fifth session, when the mention of family planning caused a strong reaction from religious leaders.

There are several factors that make reaching the indigenous, rural population in Guatemala difficult: a) there are few indigenous professionals or para-professionals with the minimum qualifications to conduct the required activities. Social development agencies usually have to compete for the few qualified candidates available. As a consequence, institutions have limited capabilities for developing materials, providing services or training and supervising field staff in indigenous languages; b) given the low educational level of community inhabitants, health volunteers can be provided only limited training. Only a few of the volunteers trained achieve the required competency demanded by outreach activities, and even fewer actually engage in these activities. Given their rudimentary training, those who do so can only provide very elementary information to their neighbors; c) for these reasons, the effectiveness and cost-effectiveness of community outreach activities in Guatemala tend to be very low; d) finally, as the previous AGES-INOPAL project showed, it is often the case that even where there is interest in learning about family planning, the status of the health volunteer or of the outside agent is not

high enough to allow him or her to resist the opposition shown by one of the top power brokers in the community. In the past, the main sources of opposition have been Catholic priests and members of affiliated pastoral organizations, but other organizations and individual lay persons are also active opponents, based on religious or political beliefs.

The problem that this project addressed was the development of an educational reproductive health strategy that could overcome these difficulties. As explained below, this strategy is based on mechanisms to select motivated community agents who already have teaching skills to provide educational services, and to reward these agents for their work.

### III. PROBLEM SOLUTION

One solution for this problems would be the creation of a strategy or system to provide education on reproductive health to indigenous audiences in rural communities in Guatemala. In this project, such a Reproductive Health Education System (RHES) was developed. The system identifies who can be the educational agents, how to screen these agents for motivation and learning skills, the training and rewards that these agents need to be provided, and the actual educational contents that can be taught to the community audiences.

If managers of social development institutions were asked about the characteristics of the ideal agents for promoting family planning and reproductive health in indigenous communities in Guatemala, they would be likely to state that a) they should be members of the Mayan community; b) they should be as well prepared as possible; c) they should have a permanent presence in the community and be respected in it; d) they should have experience in educational and promotional work in indigenous languages; e) they should be motivated to conduct the required activities; and f) using them should be reasonably cost-effective.

In 1987, under the auspices of USAID, Guatemala established a National Bilingual Educational Program (PRONEBI<sup>1</sup>). The aim of this program is to provide bilingual education to indigenous children in mostly indigenous communities. Children attending PRONEBI schools start their education in their native language and shift gradually to Spanish as they advance in their elementary schooling.

PRONEBI teachers have to first approve language exams and then undergo training in bilingual educational techniques, including the use of Mayan language textbooks and didactic materials. The over 3,000 PRONEBI teachers work five hours per day during the school period and are paid about one thousand quetzales (US \$ 175) per month plus two monthly wages as

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<sup>1</sup> During the course of this project, the agency running this program changed its name from PRONEBI to DIGEBI (Dirección General de Educación Bilingüe). In this document we keep the original denomination.

bonuses (a total of 14 months per year). Although several PRONEBI teachers live in the community where they teach, an important proportion commute to large nearby towns. Their lowly wages impel many of these teachers to have a second employment or to conduct other income generating activities in their free time. A 1993 evaluation of the PRONEBI found that the schools had improved attendance rates and the learning of students. More to the point, the evaluation concluded that PRONEBI teachers had improved their effectiveness as they acquired more experience in teaching in Mayan languages and using didactic materials and textbooks in these languages.

Most of the PRONEBI teachers are native Mayan language speakers; they make their living by teaching; although an important proportion commute to nearby large towns, most live in the communities where they work. Thus, they can assemble groups of potential reproductive health students rather easily. Finally, they also have personal prestige and are in contact with other power brokers in the communities, a fact which may reduce the chance of opposition to their teaching reproductive health contents.

In addition to finding an agent to conduct educational activities in indigenous languages, this project aimed to develop a system to filter out unmotivated or unskilled candidates, and to decrease in as much as possible training, and travel and per-diem costs.

To achieve these results, it was thought that unmotivated teachers could be filtered out by requiring teachers wishing to participate to pass an exam based on a list of readings. In this way, teachers would have to show their motivation by studying the materials and training costs would decrease. Obviously, teachers would participate only in such activities if they saw an advantage in doing so, so it was determined that teachers would be paid a reasonable amount for the educational activities they conducted in the communities. The amount that was paid was Q 125 (US \$ 22) per each 10-hour course.

Finally, in addition to the "who" and the "how," the system that was developed had to include the "what." It was decided that the Reproductive Health Education System would test teaching three 10-hour courses in rural, indigenous communities: a) birth spacing; b) pregnancy, birth and gender; and c) mother and child care. The screening process included an instruction booklet of and an exam for each of these three different courses.

In what follows, a description of the activities conducted to establish the Reproductive Health Education System and its results is presented.

#### IV. OBJECTIVES

The general objective of this project was to design and test a Reproductive Health Education System (RHES) that could be easily replicable for providing education to indigenous audiences in order to improve reproductive health knowledge in Guatemala. Specific objectives of the project were the following:

- a) To test the effectiveness of the proposed strategy to screen motivated PRONEBI teachers (i.e., test the acceptability of the screening process for these teachers).
- b) To assess the degree in which self-study of educational agents can substitute for formal training courses.
- c) To observe the acceptability of three different courses in reproductive health topics for indigenous audiences.
- d) To measure the impact of the different courses on the behavior of participants.
- e) To estimate the cost-effectiveness of the proposed strategy.

#### V METHODOLOGY

##### 5.1 Design

This was a demonstration project. A non-experimental post-test design was used.

## 5.2 Variables

The following variables were used to evaluate the courses:

- a) Effectiveness of the strategy to screen motivated teachers (i.e., acceptability of the strategy for teachers and acceptability of the different modules for teachers), measured as the number and proportion of teachers in a Department who register for the exam, and the number and proportion of courses taught of the different modules.
- b) Self-study capacity of teachers, measured by the scores earned by teachers in each of the three different exams.
- c) Acceptability of the courses for the indigenous population, measured as the 1) number of courses and number of students registered for the different courses; 2) the proportion of courses in which complaints or threats were received by teachers; and 3) the opinion that participating students have of the course.
- d) Impact of the courses, measured as the proportion of students who engage in the main behaviors recommended in the different course: use of natural methods, use of a modern method, communication with spouse or parents, use of pre-natal care services, etc, as measured by reported changes between the course and the follow-up survey.
- e) Cost-effectiveness of the strategy, measured as the cost per student attending the courses.

## 5.3 Sources of Information.

The following sources of information were used to evaluate the strategy:

- a) Exam enrollment records and exam scores, which were kept by AGES field coordinators.
- b) Course log books: for each course, the teachers kept a log-book indicating the days and hours in which the sessions of each course were held, a list of the students with a few characteristics (sex, marital status, age, contraception, pregnancy and lactational status, education, use of prenatal care services, other use of reproductive health services, etc.), the amount in quetzales contributed to attend the course, and their attendance record; a day by day description of relevant data regarding obstacles, recommendations for improving the courses, etc.; and the names, signatures and affiliations of the community health agents who attend the course (see Appendix 1).
- c) Accounting records: these provided data on expenditures incurred for the different activities: promotion, certification exams, training, payment to teachers for courses, etc.

- f) Supervision reports: AGES field supervisors filled out supervision reports for visits made to a few of the courses taught by the teachers. The report included data on classroom activities, conversations with students and community inhabitants, etc. (see Appendix 2)
- g) Follow-up survey of students: two months before the end of the project, a follow-up survey of 999 students was conducted to assess their post-course behavior, their satisfaction with the training, their recommendations, etc. The selection of students was not completely random. For administrative reasons, it was decided that at least one community from each participating teacher would be included. For each teacher who had taught a course, two course log books were randomly selected, and an attempt was made to interview all the students in the first of the two logbooks. A return to the household was made only on the same day of the first attempted contact. After the visit to the first community of each teacher had been completed, a second round of communities for each teacher was started. This was stopped when 1,000 interviews were completed. Appendix 3 presents the questionnaire used in the evaluation.

## VI DESCRIPTION OF THE INTERVENTION

In this section, we present a brief description of the different activities that were conducted to implement the Reproductive Health Education System that was evaluated.

### 6.1 Selection of Participant Regional Areas

Three largely indigenous departments of Guatemala, where AGES has field coordinators, were selected to conduct project activities: Chimaltenango, Quetzaltenango and San Marcos. There are three main Mayan languages spoken in these areas: Mam, Quiche and Kakchiquel. There are an estimated 200 PRONEBI teachers in Chimaltenango, about 300 in Quetzaltenango, and about 200 in San Marcos. Table 1 presents selected characteristics of these departments. Over 60% of the inhabitants in the three departments live in rural areas, the contraceptive prevalence rate for all methods is under 17.4%, and both the crude death, maternal and infant mortality rates are high.

### 6.2 Development of Educational Modules

In this project, the three different courses that were developed for teaching by the teachers were referred to as "modules." The three modules that were developed were a) birth spacing; b) pregnancy, birth and gender; and c) care of the mother and the child.

Each module consisted of a) a list of readings for teachers who wanted to present the exam and be certified as teachers of the Reproductive Health Educational System; b) the exams to evaluate the teachers in these topics; c) the guidelines for teaching the course.

Appendix 4 presents the booklets that were given to the teachers who were interested in presenting the exam to be certified as teachers in the Reproductive Health Education System. Each of these booklets has about 100 pages and seven to ten chapters, each explaining one theme. Each chapter borrowed from existing materials produced by AGES, APROFAM or other organizations, mostly in Guatemala, but also from other sources. At the end of each chapter, a self evaluation test was included to help the teachers assess their learning.

Chapters included in the birth spacing booklet were the following: 1) Love in marriage; 2) Decision making; 3) How the reproductive organs of women work; 4) How the reproductive organs of men work; 5) The menstrual cycle; 6) Birth spacing methods; 7) Natural birth spacing methods; 8) Barrier birth spacing methods; 9) Hormonal birth spacing methods; 10) Definitive sterilization methods. This first booklet (and the teaching guides) were developed in April and May of 1996.

In the Pregnancy, Birth and Gender booklet, the following chapters were included: 1) Pregnancy; 2) Pregnancy risks; 3) birth and post-partum; 4) Family life education; 5) Making decisions about our own body; 6) Domestic violence; 7) Sexually transmitted diseases. This second booklet was completed in July, 1996.

Finally, the following chapters are included in the Mother and Child Care booklet: 1) Maternal lactation; 2) Nutrition; 3) Under nutrition; 4) Immunizations; 5) Anatomy of the respiratory system; 6) Respiratory diseases; 7) Diarrhea; and 8) Treatment of diarrhea at home. This booklet was finished in September, 1996.

For each theme in each module, a teaching guide was developed. In as much as possible, AGES tried to develop one teaching guide for each of the approximately five two-hour sessions of each module. The teaching guides specify the objectives, contents, methodology and resources needed to teach the theme. Also, different worksheets and exercises are included and explained. Finally, questions to evaluate the students' learning are suggested. Appendix 5 presents examples of the teaching guides for the three modules.

### 6.3 Promotion of the Reproductive Health Education System (RHES) among PRONEBI Teachers.

The Reproductive Health Education System (RHES) started to be promoted among bilingual education teachers in May, 1996. The promotion was made by placing announcements and leaflets produced by the field coordinators in Ministry of Education and PRONEBI offices, and through conversations with educational authorities. These strategies had different effects in the three Departments in which project activities were taking place. In Chimaltenango there was a strong response and no further promotion was needed. In San Marcos, few teachers responded to this promotion, so the AGES field coordinator started visiting the communities and talking directly to teachers to motivate them to get involved in the system. In Quetzaltenango, the

response was weak, but the AGES coordinator did not conduct additional steps until she was able to exchange experiences with the field coordinators from Chimaltenango and San Marcos. In most cases, the teachers who requested the reading materials for the exam and who participated in other project activities had contacted AGES by the end of July, 1996.

#### 6.4 Certification of Teachers.

In order to participate in the RHES, teachers had to present and pass a written exam, and attend one course for any of the modules which they wanted to teach in the communities. The exam was based on the readings included in each of the booklets for the module. To conduct these exams, AGES prepared the questionnaires presented in Appendix 6.

There were a total of 33 exam dates for the three modules and in the three departments. For module 1 there were 12 exam dates, 13 for module two and 8 for module three. The average number of teachers presenting an exam in a given date was four, with a range of one to 16.

The teachers who passed the exam attended a course of three four-hour sessions, in which the contents of the module were reviewed, didactic techniques were discussed, and implementation and evaluation requirements were given. These sessions were mostly focused on the teaching guides presented in Appendix 6.

AGES provided 105 quetzales for travel expenses and per diem to each participant. At the end of the workshop, AGES gave the participating teachers a certificate. In total, 21 courses were given, 10 of the first module, 9 of the second module and four of the third module. Average group size was 3.4 students.

#### 6.5 Implementation and Supervision of Courses in Communities

Once teachers were certified and trained, they started to assemble groups and teach the courses in their communities and in nearby communities. Students were recruited among parents of their students, by invitation from other social development organizations or from community members who assembled the groups. Teachers were given five posters on class topics, masking tapes, markers, crayons, pencils, paper, and pens to help them conduct the classes. In addition, they were given each one of the 50 displays of contraceptive methods donated by IPROFASA, the contraceptive social marketing agency in Guatemala. The students were only given the work sheets that appear in the birth spacing booklet.

AGES set the following requirements for all the courses:

- a) that the course have a minimum duration of 10 hours, that it be taught in an indigenous language and that the group had at least 15 students;

- b) that each student make a monetary contribution, no matter how small. The reason for this was that it was thought that in the case of attacks from power brokers, the contributions could be shown as proof of the voluntary participation of the students. It was suggested that the teachers use this money for course materials or a small celebration party with the group. In addition, it was thought that by requiring a contribution, it would be more likely that only motivated students would attend the course;
- c) that at least two service delivery agents in the community (such as the traditional birth attendant, auxiliary nurse, nurse, physician, health volunteer, APROFAM CBD distributor or any other community health resource) be present in at least one session of each course. The aim was to have these service providers explain to participants about the services they provide, as well as the location where the services could be obtained.
- d) teachers were required to communicate to AGES the proposed schedule and location of the course, the number and characteristics of participants, and the names of the community health agents who would participate in the course.
- e) that wherever possible, teachers distribute contraceptives to those students wanting them. For this, AGES was to make arrangements with APROFAM so that teachers could become CBD distributors and be supplied with contraceptives.

All other factors, such as the composition of the groups (only males, only females or married couples), the location of the courses, the number, frequency and duration of sessions, etc. were determined by the teachers in consultation with the students.

At the beginning of the project, AGES expected their field coordinators to directly supervise one third of all courses. This would give the organization some sense about potential problems in the implementation of the strategy, such as the quality of education provided, the appropriateness of the contents, the interest of participants, the degree to which the courses are actually implemented, etc., and to make corrections before new courses were implemented.

## 6.6 Payment to Teachers for Courses Taught

Teachers were paid 125 Quetzales (US \$ 22) for each 10-hour course taught. This rate was considered insufficient by most of the teachers who participated. Teachers were not paid for the course until they presented for each course the logbook containing the schedule of the course, list of participants, amounts contributed, and other information on use of services. AGES central offices wrote the checks and delivered them to the teachers through the field coordinators.

In general, this system seemed to work well. Only six instances in which teachers reported courses that had not been given were discovered.

## VII RESULTS

### 7.1 Participation, Screening and Learning of Teachers in the RHES.

As explained in the introduction, reproductive health programs in Guatemala have a long history of trying to obtain the collaboration of professional, para-professional and community health agents in educational and service delivery activities. Typically a group of health agents are asked to attend a training

course, regardless of whether they want to attend or not. Once in the course, participants may learn or not, with no consequence attached: their learning is not tested, or if it is tested, it does not make any difference in the expectations that those providing the training have of the trainees, or that the trainees have of their future activities. Once back in the community, the trainee may decide to participate or not, with self-satisfaction as the only possible gratification.

Since this system of doing things has not worked very well in the past, one of the main objectives of this project was to observe if PRONEBI teachers could be induced to participate in reproductive health courses in communities despite setting requirements for their participation, including presenting an examination based on their own reading, attending a training workshop, and assembling groups. The idea was that by making it difficult to participate in the system, only motivated teachers would participate. An additional advantage was that training costs would be greatly reduced by requiring that teachers pass an exam before being able to teach at the courses. However, in acknowledgment of their effort, in this project it was decided that reasonable payment for work done should be given to the teachers. Thus, an additional advantage of this system is that rewards are offered based on the performance of teachers, at least in terms of outputs (courses) if not of quality (the degree to which knowledge and behavior of the participants are affected).

Tables 2 and 3 present the main indicators to evaluate the participation of teachers in the RHES. As it can be observed in Table 2, a total of 87 teachers in the three departments requested the family planning (module 1) booklet, and of these, 58 took the exam. Over 90% of those who took the exam passed it, and of these, a little bit under 90% actually assembled a group and taught the course. Thus, for the birth spacing module, 41% of those teachers who requested the booklet actually taught a family planning course, while for the second and third module, the figures were 58% and 40%.

Participating teachers gave a total of 496 courses. An analysis of the 492 course logbooks filled by 56 teachers show that the mean number of courses per participating teacher was of 8.78 courses, with a range of 1 to 26 courses.

In terms of the relative efficiency per department, as seen in Table 2, in Chimaltenango and Quetzaltenango 56% of those who requested the family planning readings actually completed the process and gave at least one course, compared to 33% in San Marcos. As explained before, the field coordinator in San Marcos made a very strong effort to promote the system among teachers, visiting communities and inviting teachers in them to participate in the system. Perhaps

the easiness with which teachers obtained the booklet explains the lower number of teachers who went on to give courses. For the second and third modules, San Marcos is also atypical: in the second, because 81% of the teachers who received the booklet actually gave a course, and in the third module, because only 21% did so. In this last case, the figure is low because by the time teachers in the department of San Marcos were trained, the funds were exhausted and activities had to cease.

Using the number of teachers in the three departments as the denominator, and assuming all teachers knew of the RHES (a rather large assumption), we can conclude that the proposed strategy may be at first sight interesting (i.e., they request a booklet) on the average for less than five percent of the teachers in any of the Departments, and that of these, less than one half would actually give a course. So the system does actually seem to be rather powerful for screening teachers according to their motivation, reducing the chance of spending money on people who will not conduct activities at all.

A third objective was to see if teachers could actually study by themselves, learn the contents and reduce costs by decreasing training needs. Table 3 shows that nearly 90% of those who took an exam on any of the three modules passed it. The mean scores are close to 80 over 100 possible points.

A subsidiary objective was to see if participating teachers could directly distribute contraceptives in the classes. In the beginning, AGES and the teachers were both reluctant to include this component. However, during the courses of the first module, several students began asking for contraceptives to the teachers. AGES got in contact with APROFAM and the teachers were given pill cycles and condoms for distribution to students. Unfortunately, no statistics were kept on the amount actually distributed, but the request and acceptance of teachers to be provided contraceptives certainly shows their commitment to reproductive health activities in their communities.

In conclusion, the Reproductive Health Education System that was tested seems to be acceptable to a small number of PRONEBI teachers, and to be quite powerful in screening out unmotivated teachers or teachers who do not have the learning skills needed to participate effectively in the system. In addition, the project showed that PRONEBI teachers can do much of the studying by themselves, thus reducing greatly training expenses.

## 7.2 Acceptability of the RHES for Community Inhabitants.

Acceptability of the courses for the indigenous population was measured in terms of 1) the number of courses and number of students registered for the different courses; 2) the proportion of courses in which complaints or threats were received by teachers; and 3) the opinion that participating students have of the course. Information on these variables was collected through the course log-books, supervision visits and the follow-up survey.

### 7.2.1 Information from course log-books

For each course, participating teachers had to fill out a course log-book in which the name, attendance and characteristics of students was recorded. Appendix 1 presents a copy of these logbooks.

Table 4 shows that during the seven months that the RHES was tested, a total of 496 courses were given, attended by 11,171 students. For the birth spacing module, 228 courses were attended by 5,201 students; 4,186 students attended 182 courses of the second module; and 82 courses on the third module were given on the third module, and these were attended by 1,784 students. This last module was the least attended for two reasons. First, the booklet and study guides became available only at the end of October. Second, funds for 450 courses had been budgeted in the project proposal. By the time the teachers took their exams and received the training, over 400 courses had already been given, so only a few of the module 3 courses could be taught. In fact, AGES could not avoid running over their budget given that the few teachers who had taken their exams had already started giving courses. Also, in the project proposal, an average of 20 students per course had been estimated, for a total number of 9,000 students in the three modules. The estimated total number of students was surpassed in practice by more than 24%. Finally, at the beginning of the project, AGES considered that the experiment could be considered a success if 25% to 30% of the courses and students were of the family planning module. In fact, since AGES began activities with this module and did not start offering the second module until the materials for it were ready, nearly 46% of the courses and of the students were of the birth spacing module. For the second and third module, fewer courses were offered and, consequently, fewer students were exposed to them, but this was more a consequence of the time frame in which this project was conducted than of the acceptability of courses on this topics.

The 492 course log-books recovered by AGES provide a wealth of information on the composition of the different groups. 10% of the courses were taught in Quiche, 55% in Mam and 35% in Kakchiquel. The mean attendance to the courses was 22.7 students, and the median attendance 25 students. The mean number of male students was 8.6 per course. Thirty six percent of the courses were attended only by females and 11% were attended only by males. The mean number of students under 20 years of age was 10.6, of students 20 to 29 years of age was 5.7, and of students over 30 years of age was 6.3, which shows that several courses were directed to adolescents (a total of 109 courses were attended by 20 or more students under 20 years of age). Only in 26% of the courses there were no married students, and in 29% of the courses there were 20 or more single participants. The information on contraceptive use was recorded only for 142 courses. The mean number of contraceptive users in these courses was three, and the median two. The information on attendance to prenatal care services was recorded in 212 courses, and the mean number in these courses was 11.3. Finally, the information on the amount contributed by students was recorded for 188 courses. The mean amount collected per course was 11 Quetzales, which divided over the mean number of students would yield a total of nearly 50 cents per student (about eight cents in American currency).

An analysis of the course logbooks by module shows that the birth spacing module was attended by slightly but statistically significant larger number of males, adolescents and single students than modules two and three. Module three (care of mother and child) was attended by significantly larger number of married students. The amount contributed by students was also significantly higher in the birth spacing courses.

### 7.2.2 Information from supervision visits.

Further information on the acceptability of the strategy for community inhabitants was obtained in supervision visits. Approximately 97 supervision visits to communities where courses were taking place were conducted. In the first 32 visits, the AGES field supervisors just reported what they thought was worth mentioning through a supervision report (see Appendix 3). In the last 65 visits, for each visit they filled out a questionnaire on their visit. Appendix 3 presents a copy of the questionnaire used. In the reports used in the first visits, the most common words used to describe course participants were "interested" (10 mentions), good participation (5 times) and "grateful" (3 times). Other positive words or phrases used were "they like it," "they are somewhat shy at class" (3 mentions), "they want more themes" (3 times). Negative words or phrases used were "session was canceled" (3 times), "lack of attendance," (one mention) and "Catholics did not attend course," apparently under the warning of the priest in the village. Most other phrases in these reports described the type of audience attending the course (adolescents, groups who attend prenatal care or well baby care at health post, families who are beneficiaries of other AGES projects, groups of women organized by World Vision, etc.).

In the last 65 visits, the supervision questionnaire was filled out. The supervisors were able to directly observe a classroom session in 51 visits. In all but one visit, they observed "a lot" of interest of the students during the class. The language used by the teacher was considered simple in 92% of the sessions. In 98% of the sessions the teacher used the didactic materials given by AGES. In about one half of the sessions the teacher asked "a lot" of questions and gave "a lot" of examples. In 45% of the sessions, a community service provider had attended that or another session of the course, and about 60% of these reported having been visited by a student in the courses after their presentations in the course. In five cases, problems in the community, and in 12 cases, problems in assembling the group were reported. In 92% of the cases, the supervisors felt the bilingual teacher was "very" satisfied with the experience, and in 71% the students were perceived to have a "very" positive attitude towards the course. In two reports, for example, it was noted that women in their forties were taking their daughters and daughters-in-law to the class sessions, because they felt the information provided was very important for them; in another, the case of a 37 year old man with nine children was told. As soon as he realized that there were options to control fertility, he went to have a vasectomy. Explaining his decision, he mentioned that had he known what he now knew 10 years before, he would not be as hard up as he was. In 86% of the cases, a community leader, such as the mayor, health agent or evangelical minister had been visited, and in almost all the cases, they were supportive of the course. The reasons for the support were various: some thought that the information provided was important to improve the well-being of the population; another thought that people were using

contraceptives anyway, and that perhaps using them without the correct information could be dangerous, so it was better to have the people well-informed; in other cases, a mayor and an evangelical minister were worried about adolescent sexual behavior, and they assembled the groups and requested that they be given the information. In several cases, the supervisors also reported the strong support and help in promoting the course and assembling groups of other teachers of the same school where the bilingual teacher worked, or of the school that had lent its premises for the course sessions.

The most common problems mentioned were related to cancellation of courses for rain and transportation problems, illness of the teacher. The second most mentioned problem was the lack of community service providers attending the course, in some cases because there were no services available in the community. In two cases, some women would register in the course but would not attend the sessions under the advice of the Catholic priest. However, in one of these cases, other community leaders requested that the sessions be continued and the sessions were well attended. In four cases, problems related to the teacher were observed: poor teaching skills, difficult language, shouting, screaming and scolding at class, poor explanations, or not answering questions. Other problems identified by the supervisors were somewhat more comical, like the teacher who assembled a group of 75 participants and demanded payment for three courses, the three teachers in a community with 90 women who were fighting each other for the students, or the teacher who took nearly 20 hours to complete the course, because she started the sessions with demonstrations on how to prepare jams, *atoles* and other "little things," as the AGES supervisor noted.

### 7.2.3 Information from follow-up survey.

A third source of information on the acceptability of the course for students was the follow-up survey that was conducted between November 1996 and January 1997. A total of 1,001 interviews were conducted in the communities of the participating students, of which three fourths were females and one fourth males. The mean age of the respondents was close to 31 years of age. Nearly 25% were 20 years of age or less and 47% were over 30 or more years of age. 29% had no children, 14% had one or two children, and 20% had three or four children. Sixty five percent were married or in union, 29% were single, and 6% were widowed, divorced or separated. Thirty percent could not read and 31% could read with difficulty. Eight percent could not speak Spanish and 53% could speak it with difficulty. The greater the number of children, the more likely the respondent did not know Spanish or could not read: among those with no children, only 9% could not read, compared to 49% of those who had five children or more.

In terms of course attendance, 41% had attended only the birth spacing module; 10% had attended only the pregnancy, birth and gender module; 1% had attended only the care of mother and child module; 27% had attended all the modules; 18% had attended modules one and two; and 2% had attended modules two and three.

Regarding the birth spacing module, only 15% of those who had attended it had gone with their partner. Eighty-four percent said they had liked it "a lot." When asked to say what they had liked most about this course, the majority responded that everything, how to space births and use of contraceptive methods, love in marriage, knowing our bodies and how children are created, and communication with the partner.

Regarding the pregnancy, gender and violence course, 77% of those who attended the course went alone to it. Eighty percent said they had liked the course "a lot." The topics that

were most liked were care during birth (93%), breast-feeding (86%), baby care (84%) and care during pregnancy (71%).

Regarding the mother and child care module, 69% of the persons who attended the course went by themselves, and 92% said they had liked the course "a lot." The most liked topics were breastfeeding (82%), nutrition (87%), respiratory diseases (43%), diarrheal disease (43%), and treatment of these illnesses (48%).

Eighty three percent thought it was better to have mixed male-female groups rather than only female (11%) or only male (6%). Forty two percent said they had understood easily what the teacher had said, 50% said it had been somewhat difficult to understand, and 8% said it had been difficult. Sixty three percent felt confident enough to ask questions at class, but over one third said they still had doubts about some topics that had been taught by the teacher. Sixty two percent felt they had learned "a lot" in the courses, and 73% felt the information that had been given in the courses was "very useful." Female respondents were less likely to feel they had learned • a lot• or that the information was • very useful. •

#### 7.2.4 Requests from communities

Perhaps nothing illustrates better the acceptability of the courses for than the requests that community inhabitants and teachers have made to AGES to continue providing these courses. Appendix 7 presents examples of letters received by AGES.

In conclusion, the data from different sources show that the courses were very acceptable for community inhabitants; they report liking the courses; the courses were well attended; and money was contributed in a good number of courses. There seem to have been a few problems related to teaching, like use of complicated language. However, the use of the indigenous language was often identified as a major positive characteristic of the courses.

#### 7.3 Impact on Behavior and Behavioral Intentions

In the follow-up survey, a few questions were asked to assess the impact of the courses on the attitudes and behavior of those who attended them. Some of the areas that were explored were use of services, communication with partner and use of contraceptive methods.

Regarding use of services, 10% said they had known the service providers in the community at the course. Fifty five percent said they had gone to the services before the course (only four percent for family planning), and forty percent said they had gone *after* the course. Of these 399 respondents, 77 (19%) had gone for family planning information or methods.

Of those who attended the birth spacing course and who were married (59% of all the respondents), only 59% said they had thought about birth spacing before the course, and 85%

said they had talked with their partner about birth spacing *after* the course. Fifty six percent thought that the course had made it easier to talk with their partners about birth spacing. Of those married or in union who attended the pregnancy, birth and gender course (44% of the total sample), 68% reported greater support from their partners *after* the course; of those married or in union who attended the third course (25% of the sample), 86% reported speaking about the course with their partner.

Regarding contraception, AGES asked respondents who were married or in union if before the course the respondent or his/her partner had used a method before the courses and if they were using one at the time of the interview. Unfortunately, the wording of the first question is ambiguous enough so that it could be understood as either ever use of contraceptives or use status before the course. Of 601 respondents who responded these questions, 113 (18.5%) said before the course they had used a contraceptive method (of whom 58% had used a natural family planning method). At the time of the survey, 129 (21.5% of the 601 married respondents who responded the question) said they were using a method, of whom 39% were users of natural family planning methods, 19% were users of the pill, 15% of the IUD, 21% of female sterilization, and the remainder of barrier methods. Given that 78 respondents married or in union (of which 65 were females) reported having gone for family planning information or services to a service outlet after the course, it can safely be assumed that there was indeed a considerable increase in method use after the courses, specially of modern method use.

Of the 472 married respondents who responded the questions on method use and were not using a method, 69% said they thought they would start using the method in the following months.

There were 452 women married or in union who responded the questions on contraceptive use. Of these, 15.9% said they had ever used a method before the courses, of whom 51% had been natural family planning users. 18.8% said they were using a method at the time of the survey, of whom 42% were users of natural methods, 19% were users of the pill, 13% of the IUD, 21% of female sterilization, 4% of condoms and 1% of vaginal suppositories. Of the 367 who were not using a method, 63% intended to use one in the following months.

Further evidence of the impact of the course could be obtained from the open question "For you, what was the most important thing you learned in the course(s)?" By far, the most common answer given by 576 respondents was of the "everything" or "all" variety, or confusing answers such as "it is important to learn in life." However, 22% of the answers mentioned directly contraceptive methods, birth spacing or family planning or insinuated these topics quite clearly; 7% mentioned a concrete sexuality topic; 5% mentioned a concrete gender related topic; and 3% mentioned another reproductive health topic.

Examples of the birth spacing answers were the following: "now I am going to plan my family because we have gone over the count," "I learned that when I get married I will go to the health center," "I am going to teach my children so that they do not have more family," "I learned a lot, because having children is very expensive," "how a woman under 14 years and over 35 can

be harmed by a pregnancy," "we still have time to plan our family," and "we have to be sure when we want to have children."

Examples of the sexuality answers were: "I learned the sexual parts and functions of men and women," "about fertilization and illnesses of women," "the menstrual cycle and functioning of female organs," "it helps to arrive prepared for marriage," "how our body changes and how a child is born and grows," "the parts of men and about sperm."

Finally, examples of the gender and violence answers were the following: "love in marriage and decision making," "I learned to improve communication with my partner," "I learned to value my wife and children," "I learned how to have a relationship with my wife," "when I have children I will not mistreat them," "when I get married I will know what to do with my life and with my body," "It would be good if the course could be for partners because of violence," "sex and women's rights," "that it is good to learn a lot and that the husband must listen to one," and "to know that we are beings that can be educated."

In conclusion: not having a true random sample makes any statement subject to discussion. However, judging from the data obtained in the follow-up survey, the strategy seems to have had a strong effect on those who participated in it: communication with the partner on sexuality matters seems to have been greatly enhanced; use of family planning increased during the short period after the courses, specially in the case of modern methods; and the behavioral intentions for future use were very heartening. Responses to open-ended questions also show that a clear awareness of fertility control and, to a lesser extent, but in many ways a very important beginning, of other topics like the rights of women, was also achieved.

#### 7.4 Cost-Effectiveness

Table 5 presents the data used for a cost-effectiveness analysis of the RHES. Total costs for the project in US dollars (considering the average exchange rate of 5.73 Quetzales during the life of the project) were \$27,971. Nearly 78% of all expenses were for project staff (one half-time project coordinator for 15 months and three field coordinators for one year) and for payment to bilingual education teachers for courses given (at about US \$22 per course). The remaining expenses included: a) travel and per-diem for promotion of the system, training of participating teachers, supervision of teachers by AGES field coordinators, and visits to communities for the follow-up survey of students attending the course; b) IEC and evaluation materials, including the booklets with the readings on which the teachers were tested, the examinations, didactic and classroom materials, supervision forms and survey questionnaires; and c) other dissemination, communication and administration materials. Although these costs do not include overhead (such as rent, utilities, depreciation of materials, etc), they do include all research costs that normally would not have to be incurred. Likewise, these costs include all the preparation of materials and setting up of the system, which took nearly half of the time of this project. If AGES had been able to continue teaching the courses, these costs would have been spread through a longer time period and the cost per course would have decreased.

Given that 496 courses were given and 11,171 students attended the courses, the cost-effectiveness of the strategy was of about US \$ 56 for each 10-hour course, or \$ 2.50 per student attending each course.

## VIII. DISSEMINATION AND INSTITUTIONALIZATION

Preliminary results have been presented at the following national and international workshops: a) I National Congress of AIDS Educators, organized by APAES (August, 1996); b) Central American Workshop for AIDS Prevention Organizations, organized by PASCA in San Pedro Sula, Honduras, November 1996; c) Workshop on Reproductive Health Policies, organized by the Social Cabinet of the Guatemalan Government, December 1996.

In addition, one article will appear in the Spring 1997 issue of Alternativas, the INOPAL III semi-annual newsletter.

Based on the strategies tested in this project, AGES has prepared and presented preliminary proposals for funding to Conservation International (for a environmental project in El Petén), to UNFPA, who wants to conduct further evaluation of the activities in San Marcos, and to the Population Council's NGO strengthening project. Project results were also presented to the staff of the USAID Mission in Guatemala on March, 1997.

Among the dissemination opportunities being pursued at the time when this report was finished were a) the presentation of results at the 1997 APHA annual meeting, where an abstract has been submitted; b) the publication of an article at a professional journal.

## IX. CONCLUSIONS AND RECOMMENDATIONS

This project sought to develop and test a system to provide reproductive health education in rural communities and in Mayan languages. The traditional approach to this problem had been to either have an outside agent try to carry out activities in the communities, or to train local community inhabitants and hope they will actually carry out the promotion activities. For different reasons, both systems have traditionally failed.

In this project, a different strategy was tested. As a first step, an agent who could carry out educational activities in the communities was identified, the bilingual education teachers. As mentioned elsewhere, these teachers were in many senses the ideal agents: they are mostly indigenous professionals living in the communities, where they hold a position of power and prestige; they have been trained and are very practiced in teaching, and their language competence has been tested. Instead of trying to have these teachers do free work for AGES, it was decided to offer fair payment for their services. However, because payment was to be offered, it was decided to apply stringent requirements: passing an examination based on independent readings, attending a training course, and assembling the groups by themselves or with other community agents. Likewise, in as much as possible, it was decided not to make things too easy for students. To start with, the first course offered was plainly on birth spacing, without adornments of any kind. Secondly, students were expected to contribute a payment. Third, they were not offered or given any kind of material beyond some classroom materials such as pencils and papers. The idea was that by making things difficult, both teachers and students not interested in the topic would be filtered out.

The system seemed to work well: more than the expected number of courses were given and more than the expected number of students attended the courses. The courses seemed to be well liked and the impact on behavior on the behavioral intentions were noteworthy. In the concrete case of family planning, an increase of at least 3 percentage points in the prevalence rate was observed in the seven months that the project was conducted (which can be considered a small increase, but which represents an 18% increase in use of all methods and a 40% increase in the case of use of modern methods for women married or in union.)

The sustainability aspect of this strategy has been questioned. It has to be accepted that the strategy cannot be self-sustainable because it is addressed to the dispossessed. However, it proved to be a cost-effective strategy: the cost per student of a 10-hour course was only US \$2.50, a truly low figure compared to other type of shorter, lower quality messages provided through volunteers, clinic staff and probably even media, especially if we consider the topics that were taught and the fact that the courses were taught in a Mayan language, in rural communities, and in most cases to very poor people. From this view point, it seems peculiar that after more than 25 years of trying to find a strategy to provide family planning education to indigenous audiences in rural areas in Guatemala without any obvious success, the issue of financial self-sufficiency is brought to attention. Indeed, it would be very difficult to find anywhere a report of a self-sustainable project seeking to provide services to a minority ethnic population that has a prevalence rate of use of modern methods of less than 8%.

Finally, it should be noted that the strategy could be used to further many other social development messages and practices, such as use of energy, nutrition, women's rights. To promote any of these worthy causes among the indigenous populations we would advise following the lessons learned in this project: use school- teachers in the communities and do not try to get a free ride from them: rather, fair compensation for their work should be offered. At the same time, requirements that will help screen out those who will not make a contribution should be set. Also, trying to make things too easy for the students should be avoided: it is better to have few committed students than many students who are not interested and will disturb classroom sessions.

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## XI. LIST OF TABLES

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## TABLES

TABLE 1

SOME CHARACTERISTICS OF THE DEPARTMENTS  
OF CHIMALTENANGO, QUETZALTENANGO AND SAN MARCOS

CHARACTERISTIC	DEPARTMENT		
	CHIMALTENANGO	QUETZALTENANGO	SAN MARCOS
Population 1997	410,531	661,375	837,913
Percent pop. rural	60%	61%	87%
Crude death rate per thousand	8.8	19.9	8.1
Maternal mortality rate (per 1,000 births)	13.3	12.1	7.3
Infant mortality rate	90	NA	49
Total fertility rate	6.6	NA	6.4
Mean number of children per woman	6.0	5.8	6.5
Contraceptive prevalence (1995)	15.7	NA	17.4

TABLE 2

## PARTICIPATION OF TEACHERS IN THE DIFFERENT MODULES

MODULE/ VARIABLE	DEPARTMENT			TOTAL
	CHIMALTENANGO	QUETZALTENANGO	SAN MARCOS	
Total number of teachers who gave courses	18	14	24	56
<b>MODULE 1: BIRTH SPACING</b>				
Number of teachers who received list of readings	16	23	48	87
No. who presented exam	15	19	24	58
No. who approved exam	12	17	24	53
No. teachers trained	9	16	23	47
No. who gave courses	9	13	16	33
<b>MODULE 2: PREGNANCY, BIRTH AND GENDER</b>				
Number of teachers who received list of readings	35	9	21	65
No. who presented exam	31	8	21	60
No. who approved exam	28	8	20	56
No. teachers trained	17	8	20	45
No. who gave courses	17	4	17	38
<b>MODULE 3: MOTHER AND BABY CARE</b>				
Number of teachers who received list of readings	23	15	19	57
No. who presented exam	18	11	17	46
No. who approved exam	15	9	17	41
No. teachers trained	14	9	17	40
No. who gave courses	10	9	4	23

TABLE 3

## EVALUATION OF TEACHERS

MODULE/ VARIABLE	DEPARTMENT		
	CHIMALTENANGO	QUETZALTENANGO	SAN MARCOS
<b>MODULE 1: BIRTH SPACING</b>			
No. who presented exam	15	19	24
No. who approved exam	12	17	24
Minimum score	72	45	61
Maximum score	95	83	89
Mean score	84	68	74
<b>MODULE 2: PREGNANCY, BIRTH AND GENDER</b>			
No. who presented exam	31	8	21
No. who approved exam	28	8	20
Minimum score	20	60	40
Maximum score	88	94	91
Mean score	65	82	78
<b>MODULE 3: MOTHER AND BABY CARE</b>			
No. who presented exam	18	11	17
No. who approved exam	15	9	17
Minimum score	60	72	65
Maximum score	90	95	96
Mean score	80	84	81

TABLE 4

## ACCEPTANCE OF COURSES IN COMMUNITIES

MODULE/ VARIABLE	DEPARTMENT			
	CHIMALTENANGO	QUETZALTENANGO	SAN MARCOS	TOTAL
<b>MODULE 1: BIRTH SPACING</b>				
No. of courses	64	55	109	228
No. of persons attending courses	1,396	1,377	2,428	5,201
<b>MODULE 2: PREGNANCY, BIRTH AND GENDER</b>				
No. of courses	73	22	87	182
No. of persons attending courses	1,323	547	2,316	4,186
<b>MODULE 3: MOTHER AND BABY CARE</b>				
No. of courses	33	36	13	82
No. of persons attending courses	567	900	317	1,784
<b>TOTAL</b>				
No. of courses	174	113	209	496
No. of persons attending courses	3,286	2,824	5,061	11,171

TABLE 5

COST-EFFECTIVENESS OF THE REPRODUCTIVE HEALTH EDUCATION SYSTEM  
(\$ 1 US = 5.73 Q)

<b>I. COSTS (IN US \$)</b>	
Personnel	\$ 10,792
Payment to teachers	\$ 10,917
Travel & per-diem	\$ 3,436
IEC & evaluation materials	\$ 2,629
Other	\$ 197
<b>TOTAL COSTS</b>	<b>\$ 27,971</b>
<b>II. EFFECTIVENESS</b>	
Number of courses given	496
Number of students attending the courses	11,171
<b>III. COST-EFFECTIVENESS</b>	
Cost per 10-hour course	\$ 56.39
Cost per student attending course	\$ 2.50

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Appendix 2: Example of supervision reports

Appendix 3: Questionnaire used in follow-up survey of students.

Appendix 4: Booklets with required readings for exams of teachers

Appendix 5: Examples of teaching guides for the three modules.

Appendix 6: Questionnaires used in the exam for teachers.

Appendix 7: Letters from teachers and community inhabitants requesting reproductive health courses.

## VOLUMEN II

### REPRODUCTIVE HEALTH EDUCATION IN INDIGENOUS AREAS THROUGH BILINGUAL TEACHERS IN GUATEMALA

#### APPENDICES

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Appendix 2: Example of supervision reports

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