Improving Educational Quality (IEQ) Project

BASELINE STUDY OF BILINGUAL EDUCATION IN EL QUICHÉ

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EXECUTIVE SUMMARY

INTRODUCTION

This document presents a summary of the results of a study to establish a baseline for assessing the development of bilingual intercultural education in the Department of El Quiché. The department of El Quiché is among the areas most under-served by Guatemala's educational system. Limited educational resources, especially in student's maternal language, a generally recognized poor quality of teaching, and the recently ended 36-year civil war have all contributed to this condition. The USAID/G-CAP education strategy supports selected commitments to education reform presented in the Peace Accords signed in 1996. The Mission's strategic objective: Better Educated Rural Society focuses heavily on El Quiché. However, little is known of the status of education in the department.

The MEDIR/IEQ II project is working with USAID and its partners involved in bilingual education, especially the Directorate of Bilingual Intercultural Education (DIGEBI), to build capability in monitoring/evaluation and applied research so that the elements of schooling affecting student performance can be identified locally and decisions made regarding improvement in the quality of bilingual education service delivery. As part of this effort, a baseline study of primary education in El Quiché was designed jointly by MEDIR and DIGEBI personnel. The following pages summarize the procedures used to collect baseline data, the principal findings, and the implications drawn from these findings.

METHOD

The study focused on the first educational cycle of primary school (preschool through third grade). It examined a number of variables related to issues such as physical conditions of the schools, teacher experience and mastery of the key elements of the program, and student participation in the classroom including language use, as well as parent, teacher, and student views of bilingualism and interaction with members of other cultures. The study was conducted by a DIGEBI/MEDIR team in August-September 1998. It will be repeated annually to determine change over time in program outcomes. A multi-method design consisting of inventories, checklists, classroom observation forms and focused interviews was employed in a sample of 55 schools to measure the implementation of the DIGEBI program in El Quiché.

PRINCIPAL FINDINGS

Physical conditions in the bilingual rural schools of El Quiché are generally adequate in terms of space, protection of the children from the weather while studying, and availability of facilities such as potable water and latrines. However, few schools have electricity.

-90% of schools are made of permanent materials
-90% have water and at least one latrine

-44% have electricity

Student performance is uneven with the greatest difficulties being encountered at the first grade level. Promotion rates from first to second grade significantly lower than other grades for both boys and girls and first graders participate less in the classroom than children of other grades. This is also the grade where the teachers with the least experience are generally found.

-53% of first graders are promoted, compared to more than 77% of children in other grades
-There is a 30% drop in use of Mayan from preschool to first grade
-37% of first graders are called on by teachers compared to more than 45% of children in other grades

The availability of teachers with bilingual appointments is insufficient to meet the needs of DIGEBI and the insufficiency increases at each grade level. Although teachers with bilingual appointments have better knowledge and are better able to implement the bilingual multicultural education program than teachers with a regular appointment, the quality of implementation must be greatly improved to meet the goals of the program.

-After preschool level, teachers used Mayan less than 43% of the time and the percentage decreased at each grade level.
-Only 44% of bilingual teachers and 6% of those with regular appointments were familiar with half or more of the key elements of DIGEBI
-Only about 25% of the teachers could define clearly aspects of multiculturalism

Teachers' interactions with students in the classroom allow little opportunity for student participation. Teachers favor boys over girls. However, less than half of the children of either gender in a classroom interact with the teacher on a given day. Thus, many of the students are unlikely to have meaningful contact with the subject matter, limiting their opportunities to learn.

-girls' active participation is at 70% of their presence in the classroom compared to 124% for boys
-30% of the total number of children in the classroom initiate interactions with teachers
-44% of the total number of children in the classroom are called on by teachers

There is a discrepancy between the children's preferred language and the language of instruction. Mayan is the preferred language of students of both genders, except when interacting with teachers. This is consistent with the data on teachers that show Spanish to be the predominant language of instruction in the sample schools.

-Over 70% of students' classroom interactions with peers include use of Mayan
-Over 70% of the students reported interacting exclusively in Mayan with family members and less than 5% interacted exclusively in Spanish with their families
-Only about one-third of the interactions with teachers took place in Spanish

Students in El Quiché are generally favorable toward their schooling and reading is the subject most often cited as enjoyable. Mathematics, in contrast, is not commonly identified as a favorite subject. Learning a second language is not viewed negatively by most students

-95% of respondents identified positive aspects of schooling.
-29% identified reading and writing as a favored compare to only 2% for mathematics
-7% viewed learning a second language negative and 3% saw this as positive

Political awareness is relatively high among the students of El Quiché, as a majority of students know what a mayor is and over half could specify functions of government that are carried out by a mayor. Knowledge of the national political situation was somewhat lower than the local one but still relatively high. Girls had greater political awareness than boys in both cases.

-70% of students said they knew what a mayor is
-55% of students named the president
-63% of girls and 46% of boys specified aspects of governance as work of a mayor

Teachers' participation with the community is related to both time in the school and distance, and female teachers are less likely than males to undertake projects. Even where teachers work with the community, parents have little involvement in either school management or student learning in the context of the school. Their participation is limited to physical labor or other in-kind contributions. Most parents expect their children to complete primary school.

-70% of teachers with more than two years at a school and 62% of teachers in close schools had projects with the community
-85% of mothers fix food, make infrastructure improvements or provide in-kind
-77% of fathers make infrastructure improvements, or provide in-kind

There is little consensus among teachers, students, and parents on what it means to be a Mayan or approaches to teaching in a multicultural manner. There is a strong tendency among students to relate being a Mayan to someone who is inferior or something that existed in the past.

IMPLICATIONS

Although DIGEBI's goal is a maintenance program that prepares students to successfully function within two cultures and languages, the maternal language is used less and less by teachers as students advance in grade. Not using the preferred language of the children runs the risk of limiting their understanding of the subject matter, as well as endangering the full development of literacy in the first language.

Similarly, involving all children in classroom activities must be a priority for schools in El Quiché if children are take advantage of the subject matter and the child-centered learning goals of DIGEBI are to be met. Training focused on two basic areas:

decentralization/individualization of instruction; and use of the mother tongue in providing academic content might help DIGEBI meet its pedagogical goals.

There must be a focus on first grade in all refinements in pedagogical practice. This is the level where the greatest wastage to the system occurs and a concentrated effort to aid children in being successful in first grade can greatly increase the efficiency of schooling in El Quiché and elsewhere in rural Guatemala.

Integrated curriculum components in both the first and second language that focus on reading and writing and integrate basic mathematics skills into the content might be a refinement that can take advantage of students' positive perception of reading. Similarly, the findings suggest that emphasis on the development of curricular components dealing with identity should be a strong focus of curriculum refinement.

Students' political awareness suggests that focusing on student government especially among girls and building discussions of political process into classroom activities, perhaps through reading the newspaper, can positively affect student classroom participation.

The importance given to their children's education by parents can be taken advantage of through information campaigns that stress the role of bilingual education in meeting parental expectations. Interactive methodologies such as those used by NEU or PRONADE, or others like action research might be used to expand the types of participation of parents in their children's schooling and their knowledge of bilingual multicultural education. If teachers were to lead in implementing such methodologies, however, non-monetary incentives might be needed to encourage teachers to remain in the same schools for more than one or two years.

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List of Acronyms

CTA	Technical Administrative Coordinator (A supervisor-like local authority)
CTP	Technical Pedagogical Trainer
DIGEBI	General Directorate of Intercultural Bilingual Education
GOG	Government of Guatemala
IAP	Index of Active Participation
IBP	Index of Breath of Participation
IEQ II	Improving of Educational Quality II
IOP	Index of Openness of Participation
IRP	Index of Responsive Participation
MEDIR	Measuring Educational Indicators and Results
MOE	Ministry of Education
NEUBI	New Unitarian Intercultural Bilingual School
PRONADE	National Program for Educational Development
SO	Strategic Indicator
USAID/G	United States Agency for International Development, Guatemalan Mission

BASELINE STUDY OF BILINGUAL EDUCATION IN EL QUICHE

I. INTRODUCTION

This document presents the results of a study to establish a baseline for assessing the development of bilingual intercultural education in the Department of El Quiche. The study focuses on the first educational cycle of primary school (preschool through third grade). It examines a number of variables related to issues such as physical conditions of the schools, teacher experience and mastery of the key elements of the program, and student participation in the classroom including language use, as well as parent involvement, and parent, teacher, and student views of bilingualism and interaction with members of other cultures. The study was conducted by a DIGEBI/MEDIR team in August-September 1998. It will be repeated annually to determine change over time in program outcomes.

A. Background

Guatemala's education system has long been characterized by limited coverage, poor quality, and centralized decision making. There is a concentration of resources in urban areas that contribute to gender and ethnic inequities. Over 30% of the school-age population is not enrolled in school and the highest number of out-of-school children are in rural areas inhabited primarily by Mayan speakers. Even where rural schools are available, they tend to offer fewer grades, their teachers have less training, and they have fewer basic teaching resources than do urban schools. Despite the fact that over half of all Guatemalan school-age children are indigenous, fewer than ten percent have access to the first three years of schooling in their mother tongue. The average indigenous male has 1.8 years of schooling while the average indigenous female has only 0.9 years of schooling. By comparison, non-indigenous males and females receive 4.5 years and 4.0 years of schooling, respectively.

Among the areas most under-served by Guatemala's educational system is the department of El Quiche. In addition to limited educational resources, especially in student's maternal language, a generally recognized poor quality of teaching, and the overall inappropriateness of the curricula for the rural indigenous population, the Quiche region suffered under the recently ended 36-year civil war that exacerbated the educational neglect in the rural indigenous areas, widening the gaps between urban and rural, boys and girls, and indigenous and non-indigenous to education access and attainment.

The Peace Accords, signed in December 1996 between the Government of Guatemala (GOG) and the Unidad Revolucionaria Nacional Guatemalteca (URNG), ended the civil conflict. They are designed to respond to the historical neglect and the under-investment in education and highlight the fundamental role of education in fostering economic opportunity, democratic participation, social inclusion, and multicultural understanding. The Peace Accords commit the GOG to support programs

aimed at benefitting the rural poor, women, and indigenous groups and assign a high priority to educational reform. Key elements in the Peace Accords mandate a dramatic expansion in educational coverage, better quality, expansion of intercultural and bilingual education, a sharp increase in education sector investment, equity across gender and ethnic groups, and wider community control and participation.

The USAID/G-CAP education strategy supports selected commitments to education reform presented in the Peace Accord on the Rights and Identity of Indigenous Peoples and the Accord on Socioeconomic Aspects and the Agrarian Situation. Specifically, it will contribute to the expansion of educational coverage mandated by the Peace Accords, raise the quality of education, and increase the capacity of the Ministry of Education (MOE) and civil society organizations to define and carry out policies and strategies that reinforce the cultural and linguistic pluralism of the country. The SO seeks to promote access and pluralism through: (1) increased linguistic and cultural relevance of education and training; (2) expanded participation of civil society in education decision-making and implementation; and, (3) the application of innovative education strategies to improve equity, efficiency and quality. USAID's education strategic objective, Better Educated Rural Society focuses heavily on El Quiche. However little is known of the status of education in the department.

The MEDIR/IEQ II project is working with USAID and its partners involved in bilingual education to build capability in monitoring/evaluation and applied research so that the elements of schooling affecting the performance of students can be identified locally and decisions made regarding improvement in the quality of bilingual education service delivery in Guatemala. As part of this effort, a baseline study of primary education in El Quiche was designed jointly by MEDIR and DIGEBI personnel. The following pages discuss the procedures used to collect baseline data on a series of questions related to bilingual education service delivery. Following chapters give the findings of the baseline study and present conclusions and implications drawn from these findings.

B. Method

1. Research Questions

The research questions were developed through discussions with DIGEBI personnel, USAID education specialists, and others involved in bilingual education. The research questions for the baseline study of the education situation in El Quiche focused on the implementation of the DIGEBI program at the school, classroom, and community levels. Schools of other programs working with bilingual children were also included. Within each set of research questions, the emphasis was on assisting the managers of the programs to fine-tune their implementation strategies in the schools of the department and to determine those elements of the program that, when implemented effectively, were critical to student performance. The general research questions by area were as follows:

Schools

Where are schools located in relation to paved roads and to the departmental office of DIGEBI? What is the availability of transportation?

What is the physical condition of the schools?

How many teachers and students do schools have (by age and gender)? What facilities to the schools have?

Teachers

What experience do the teachers bring to the classrooms (languages spoken and written, academic preparation, years teaching)?

To what degree have the teachers mastered the principles of DIGEBI and are committed to them?

How do teachers participate in the life of the school (develop projects with parents, participate in quality circles)?

What do teachers do in the schools (types of activities, types of interactions with students of different ages and genders)?

What are the attitudes of the teachers in regard to the benefits of students reading and writing in two languages (and in regard to the DIGEBI program)?

Students

What languages to the girls and boys speak in the classroom?

What types of interactions do girls and boys have with the teacher?

What do boys and girls like about the school (what don't they like)?

What do the girls and boys know about multiculturalism?

What do the girls and boys know about Guatemalan politics?

Community

What are the characteristics of the parents of DIGEBI male and female students (years of schooling, occupation, languages, number of male and female children)?

What knowledge do parents have of the DIGEBI program?

How do parents participate in the education of their children and with what frequency do they participate?

What attitudes do parents have toward people that speak only one language? What do they think of bilingual multicultural education?

What do parents want their sons and daughters to learn in school?

2. Design

A multi-method design consisting of inventories, checklists, classroom observation forms and focused interviews was employed to measure the implementation of the DIGEBI program in El Quiche.

Sample. The sample of schools for the baseline study was obtained using a random, stratified sample. Schools in El Quiche were stratified by distance from a municipal center and school size. The majority of the 55 sample schools were implementing the DIGEBI program, while 10 were implementing the NEUBI program, 5 were PRONADE schools, and 6 were Ministry of Education schools without a distinct program.

Within the school sample the following data sources were used:

- 140 classrooms were observed (89 DIGEBI, 22 NEUBI, 13 PRONADE, and 16 MOE)
- 124 teachers were interviewed (80 DIGEBI, 18 NEUBI, 11 PRONADE, and 15 MOE)
- 109 parents were interviewed (34 mothers and 33 fathers DIGEBI, 10 mothers and 10 fathers NEUBI, 4 mothers and 6 fathers PRONADE, 6 mothers and 6 fathers MOE)
- 100 third grade students were interviewed (52 girls and 48 boys)

The sample had an adequate number of schools and teachers to determine significant differences among groups (two or more standard deviations) with a power of at least 96% and a level of confidence of 95%.

Instruments. In order to implement the multi-method design of the research, a series of instruments were developed. These instruments included inventories of instructional materials, classroom maps, classroom observation forms and focused interviews with teachers parents and children. The inventories were used to identify both DIGEBI-developed and non-DIGEBI materials available in each classroom. Maps were employed to identify the characteristics of the children and teachers and to

examine the context in which they interact. Classroom interaction was measured through a teacher-student interaction protocol and a student observation checklist. The former instrument focused on teachers' interactions with individual students in different contexts and the language used in different academic classroom activities. The form was used for ten minutes at six different times during the instructional day in classrooms at the first three grade levels. The student checklist was used primary to judge student engagement during lessons and consisted of several spot checks of a sample of children of different genders. Three open-ended interview schedules were developed. These instruments explored the behaviors of teachers, students and parents with relation to bilingual multicultural education.

Training of Field Workers. Lic. Fernando Rubio, and the study supervisors, designed the training. Training took place over a five-day period in early August of 1998. Training was holistic in the sense that each aspect of successful qualitative research or fieldwork in the school settings was continually related to other aspects and learning was highly experiential. The general content of the training was: introduction the DIGEBI program; introduction to the study; introduction to qualitative methods, role management, use of checklists, use of observation protocol; field interviewing techniques; and simulation fieldwork in local schools. Training included exercises using videotapes of classroom interaction in schools, and served to pilot and refine the instruments.

Field procedures consisted of local researchers working in two-person teams and spending one or two days at each school. Field manuals were developed as a reference guide to field procedures during the investigation. Other quality control procedures included instrument editing, reinterviewing and parallel observations by supervisors with a small number of sample teachers.

Data Analysis. Data analysis consisted of calculating the absolute and relative frequencies of each indicator. These frequencies were used to make comparisons between groups with different characteristics. Where appropriate, other analyses such as chi-square or analysis of variance were made. Where necessary, special indices were created to control for differences in enrollment or attendance among target groups, where such differences might affect participation.

3. Operational Definitions

Dropouts	=	the sum of the number of children of each sex identified by individual teachers as having left school.
Repeaters	=	the sum of the children of each sex in each class who are identified by the teacher as repeating the grade.
Promotion	=	the sum of the total number of children in each classroom less the number of repeaters, failures, and deserters identified by

each teacher. (Assumes that the number of repeaters from the previous year is a good indicator of study year repetition rates.

Mayans = teachers and parents who identify themselves as Mayans. Children who are identified by their teachers as Mayans. This definition was used in the case of children because the study deals with participation and teachers' perceptions of student ethnicity could influence their interactions with certain children.

Index of Active Participation (IAP) = the ratio of the percent of interactions initiated by children with the teacher in the classroom and the relative frequency of attendance of these children.

Index of Responsive Participation (IRP) = the ratio of the percent of interactions initiated by the teacher with students and the relative frequency of attendance of these children.

Index of Open Participation (IOP) = the number of children initiating interactions with the teacher divided by the total number of children present in the class.

Index of Breath of Participation (IBP) = the number of children called on by the teacher divided by the total number of children present in the class.

C. Assumptions

The study was based on several assumptions. First, the school and the class are the key units of analysis in planning and intervening to improve the quality and efficiency of education. Second, the school is a social system and the interaction of all of the elements has an influence on student learning beyond that provided individually by inputs to the school. This is not to suggest that the uniqueness of each school makes aggregate measurement impossible, but rather that accurate measurement of the impact of school is a complex undertaking requiring the integration of multiple methodological approaches.

II. FINDINGS

A. Schools

A number of aspects were examined in defining the characteristics of bilingual schools in El Quiche. These included: where the schools are located in relation to paved roads and to the departmental office of DIGEBI; the physical condition of the schools; number of teachers and students in schools of different types; and the facilities available to these individuals. Finally, general characteristics of the schools in terms of student participation and performance were examined.

1. Location

The average distance of the schools was 12.5 kilometers from a municipal center. As shown in Table 1, about one-third of the schools were within five kilometers of a municipal center. The majority were what might be considered a medium distance. That is, between six and 20 kilometers. About 20% were over 20 kilometers or "far" from a municipal center.

Table 1: School Location

Distance from the municipal center	Percentage of schools
5 Km. or less	31%
6 to 10 Km.	20.7%
11 to 15 Km.	13.8%
16 to 20 Km.	13.8%
21 to 25 Km.	6.9%
More than 25 Km.	13.8%

The average amount of time to reach the relatively close schools in a vehicle was 24 minutes. For medium distant and far schools the amount of travel time in a vehicle was 42 minutes and 60 minutes respectively. For those schools that could not be reached directly by vehicle, the average walking time was 40 minutes to close schools and 150 minutes to medium distant schools. All schools that were over 20 kilometers from a municipal center were accessible by vehicle.

2. Physical Condition and Facilities

The majority of the schools had buildings that were specifically constructed to be schools. In terms of general physical characteristics, 100% had roofs of durable material (tin, molded concrete, concrete, tiles), 94% had cement floors and 91% had

concrete block walls. Only 6% of the buildings had dirt floors and adobe walls that did not meet the building code standards of the Ministry of Education.

The most common design was that of a separate administrative office (73%), followed by space for a kitchen (65%), although in the majority of the schools the kitchen was erected with non-permanent materials. Slightly more than half of the schools (53%) had storage areas and 12% had a space dedicated to a library.

In general, the physical conditions of the schools were rated as "good" (59.4%) . However, 16% of the schools were considered in "bad physical condition" and 25% were rated as adequate. In 75% of the schools, the windows successfully protected students from the rain.

On close examination of the conditions of the classrooms, it was found that they met construction norms. However, some classrooms had not been adequately maintained. In terms of the roof, 27.3% of the classrooms with tin roofs and 16.7% of those with molded concrete had water leaks. Similarly, 14.5% of the walls had leaks that wet the insides of the classrooms. Twelve percent of the walls had windows that let in rain water. Finally, in 15.9% of the classrooms with permanent flooring, water ran through the classrooms when it rained.

As might be expected, classrooms with less permanent materials had greater problems with rain. Fifty-five percent of those with adobe walls had problems of humidity, and 83% of the schools with dirt floors suffered from running water inside when it rained.

There was also differences in the availability of sanitary facilities and potable water. Nine percent of the schools didn't have latrines, 6% had just one latrine and 27% had two latrines. The rest of the schools had three or more latrines. The great majority of the schools (91%) had access to piped water or covered well water, although the are questions about water quality. Researchers rated 19% of the schools as "dirty," 31% as adequate, and one-half as clean.

More than half of the schools (56%) didn't have access to electricity. It should be noted that in several cases, the communities had access to electricity but it was not available in the schools. A systematic record of this phenomena was not kept, as it was unexpected.

3. School Population

Slightly more than half of the teachers in DIGEBI were males (53%) and the rest were females (47%). There was a greater probability that women taught in schools that were closer to a municipal center (60% vs. 70.6%). Thus, they were more likely to teach in schools of six grades or more (60.6% vs. 54.8%). Their presence in graded schools also made it more likely that they taught only one grade.

About one-fourth of the schools were relatively small: 3% had one classroom; 9% had two classrooms and 15% had three classrooms. Approximately two in five schools (41%) had between four and six classrooms (12%, 15%, and 14%, respectively). Nearly one-third of the schools were complete schools with all six grades and seven or more classrooms (separate classrooms for preschool and all classrooms. All of the schools had similar schedules. The school day generally was from 7:30 am to 12:30 p.m. Some schools, however, followed a schedule from 8 am to 1 p.m.

Given the difference in school size, average school population is meaningless. However, student-teacher ratios give an idea of the teaching load and can suggest appropriate teaching strategies. The average student-teacher ratio for the sample was 19.5 students per teacher. This ratio remained fairly constant when examined by grade level. However, the ratio increased by distance from a municipal center, with the nearest schools averaging 17 students per teacher, those farther away averaging 21, and the farthest schools averaging 28 pupils per teacher.

4. Student Performance

The efficiency of the school is shown in the frequency with which children attend, as well as promotion, repetition, and dropout rates. General statistics on student performance in these areas were gathered at the school and cross-checked, when possible, through observation or other means.

Attendance. As seen in Table 2, teachers' data showed attendance to be fairly high over the course of the year. In addition, attendance of girls was slightly higher than that of boys. Direct observation in the classroom found attendance on a given day to be somewhat lower than that suggested by the teachers. In the observations, girls had slightly lower attendance than boys. This difference may be the result of a lack of care taken by teachers in reporting attendance.

Table 2: Attendance

Data Source	Girls	Boys	Total
Observed	71.1%	73.6%	73.2%
Reported by the teacher	84.6%	82.6%	83.7%

Rates of repetition and dropout were taken at the time of the study in addition teachers were asked to estimate the promotion rates of their students at the end of the year. As shown in Table 2, overall repetition and dropout were slightly lower for girls, leading to an estimated promotion rate that was two and a half percentage points higher than that of boys. Overall, three-fourths of the students in the sample schools were to be promoted. This figure is consistent with the overall promotion rate for the department of 75.5% (Anuario Estadístico 1998).

Table 3: Promotion, Repetition, and Dropout

	Girls	Boys	Total
Repetition	13.5%	15.8%	14.7%
Dropout	9.8%	10.0%	9.9%
Estimated Promotion	76.7%	74.2%	75.4%

When promotion, repetition, and dropout were examined by grade level, first grade had the lowest rates. Only fifty-three percent of first graders were promoted, 24.3% were repeaters, and 12. 2% had dropped out. Percentages were similar for male and female first graders. This is consistent with the statistics for the department as a whole.

B. Teachers

Teachers are one of the central elements in any educational intervention, as it is with them that the implementation of programmatic change rests. This baseline study examined the experience that teachers bring to the classrooms (languages spoken and written, academic preparation, years teaching); the degree to which teachers have mastered the principles of DIGEBI and are committed to them; what teachers do in the schools (types of activities, types of interactions with students of different genders); the attitudes of the teachers in regard to the benefits of students reading and writing in two languages (and in regard to the DIGEBI program); and how teachers participate in the life of the school (develop projects with parents, participate in quality circles).

1. Teacher Experience

The teachers who work in the bilingual schools of DIGEBI were generally experienced. The average years of experience was 10.4 and some have more than 20 years of experience. There were no differences in the teachers with appointments as bilingual teachers and those with regular appointments in terms of length of time since they had completed their academic training, length of service, number of grades taught, or time working in the school in which they were interviewed. However, those teachers with bilingual appointments who had taught preschool, had much more time teaching this grade than teachers with a regular appointment (16.24 years vs. 2.31 years). Many of the teachers had experience teaching all of the grades. Table 4 highlights this experience.

Table 4: Grades Taught and Average years in Grade

Grade	Percent of Teachers	Average Years in a Grade
Preschool	38.8%	9.9

First	81.2%	4.3
Second	68.2%	3.6
Third	62.4%	3.4
Fourth	48.2%	3.6
Fifth	38.8%	3.5
Sixth	37.6%	3
Total	100%	10.4

In addition, a large number had taught two or more grades simultaneously. That is, they had been teachers of multigrade classrooms, although not necessarily teaching in schools officially designated as "multigrade schools." This was especially true beginning in second grade, as preschool and first grade teachers tend to have intact classes. As shown in Table 5, there is a consistent relationship between level and the likelihood of a multigrade classroom, with above 80% of the upper primary levels serving students of more than one grade. This is to be expected in rural areas of El Quiche, as it has been shown that the average number of teachers per school for the department is two (Chesterfield and Rubio, 1998). In DIGEBI schools, the average number of teachers was three per school.

Table 5: Grade Taught and Percentage of Multigrade Classrooms

Grade taught	Percentage of multigrade teachers
Preschool	0%
First	25.9%
Second	52.2%
Third	63.2
Any upper grade (4-6)	85.7

As might be expected there was a relationship between distance from a municipal center and the likelihood of teaching in a multigrade situation. Only 12 of the classrooms in schools at a distance of 5 Km. or less from a municipal center were multigrade. In schools farther from a municipal center, 42% of the classrooms were multigrade.

There was a strong tendency for the less experienced teachers to be assigned to the early grades. As shown in Table 6, those teachers in their first year of work were

found at the first grade level in significantly greater frequency than would be expected by chance.

Table 6: Distribution of Teachers in Their First Year

Grade	Number	Percentage by grade
First	19	50
Second	12	31.6*
Third	12	31.6*
Upper primary grades	9	25*

*X2, p>.03

2. In-service Training

DIGEBI has had as one of its principal actions to provide in-service training to teachers to assist them in implementing the bilingual education program. Other dependencies of the Ministry have also carried out in-service training for teachers in a number of basic aspects. Teachers were asked about the types and number of in-service training that they had received.

The areas in which the largest percentage of teachers had received training were Spanish and mathematics (60%). Slightly more than 40% had received training in bilingual instruction and a like number had courses in social studies. Only about a third had training in natural sciences or providing multigrade instruction.

Differences by appointment were also examined. As can be seen in Table 7, more bilingual teachers had received training in each area than those with a regular appointment. The differences were most profound in mathematics, Spanish, bilingual education, and teaching Mayan language.

Table 7: In-service Training Received by Type of Appointment

Areas of Training	Type of Appointment	
	Bilingual	Regular
Teaching of mathematics*	82.4%	45.1%
Teaching in Spanish*	76.5%	49%
Bilingual Education*	76.5%	21.6%
Teaching a Mayan language (K'iche´or Ixil)[1]	76.5%	19.6%

Teaching social studies	55.9%	39.2
Teaching natural science	50%	31.4%
Teaching multigrade classrooms	35.3%	32%

* Significant differences with an alpha of 0-05 or less

Teachers reported that they had received training from a number of sources. These included CTP´s, CTA´s and supervisors (67.9% of the teachers), technical personnel of DIGEBI (30.4%), other teachers (17.9%) and other units of the Ministry (10.7%).

3. Language Ability

Teachers with bilingual appointments tended to be assigned to preschool or first grade, as more than half of the teachers in those levels have bilingual appointments (Table 8). This percentage decreases rapidly at second grade and above where only about a fourth or less of the teachers had bilingual appointments. However, the majority of all teachers in the bilingual schools of El Quiche were bilingual. More than 60% of the teachers interviewed at each grade level identified themselves as fluent in a Mayan language and Spanish.

Table 8: Distribution of Bilingual Teachers by Grade

Characteristics	PPr	1st.	2d.	3rd.	Upper
Bilingual App.	68.8%	55.6%	21.7%	17.4%	28.6%
Oral Bilingual	93.8%	81.5%	60.9%	60.9%	64.3%

The majority of those teachers who identified themselves as bilingual felt that their ability to speak and read both languages was good or adequate. As shown in Table 9, a majority also felt that they could write both languages acceptably, however, the percentage dropped somewhat. Between one-fourth and one-third of all teachers working in bilingual schools had no abilities in a second language.

Table 9: Teacher Bilingual Ability

Language Ability	Good	Adequate	Poor	None
Speak	41.3%	30.0%	5.0%	25.0%
Read	26.3%	42.5%	0.0%	31.3%
Write	20.0%	43.8%	0.0%	36.3%

4. Mastery of the Principles of Bilingual Education

There is a consensus in the international literature on educational innovation that mastery of an instructional approach by teachers is a critical factor in adoption and sustainability. A second factor closely related with mastery of the intervention is commitment to the approach. As an indication of teachers' mastery of the bilingual methodology, they were asked to identify the key elements of the DIGEBI approach. In addition, a set of questions about attitudes toward the methodology were used to explore commitment.

Table 10 shows that teachers had only a minimal understanding of the key elements of the DIGEBI program. Of the six key programmatic elements, almost all of the teachers with a bilingual appointment could identify as least one of the elements of the program. However, only 44% of these teachers could identify three or more. Teachers with regular appointments had almost no knowledge of the programmatic elements, despite working in the schools where the program was being implemented. Less than a third of these teachers were able to identify any of the elements.

Table 10: Mention of Key Elements of DIGEBI

Number of elements mentioned	Type of appointment	
	Bilingual	Regular
None	3.1%	70.8%
One	28.1%	8.3%
Two	25.0%	14.6%
Three	25.0%	4.2%
Four or More	18.8%	2.1%

Although the majority of all teachers (87%) thought bilingual education had benefits for their students, there were differences by type of appointment. Ninety-seven percent of teachers with bilingual appointments saw the program as beneficial compared to 80% of teachers without bilingual appointments. These differences were maintained when teachers were asked their general opinion about bilingual education. As shown in the following table, more bilingual teachers identified the use of the method to maintain the mother tongue, and none of these teachers had negative comments about the program. Ten percent of the other teachers had negative comments.

Table 11: Opinion of Bilingual Education by Type of Appointment

Opinion	Types de opinion	% of teachers		
		Bi	Reg	Total
Positive	Helps to conserve language/teach two languages	29.4%	10.2%	17.8%
	Helps the children	17.6%	26.5%	22.6%
	Simplifies the work	11.8%	16.3%	14.3%
	Important, but not sufficient	11.8%	6.1%	8.3%
	Not much support	2.9%	-	2.4%
	Unspecified (is good, is necessary, etc.)	26.5%	26.5%	26.2%
	Total - positive opinions	100%	85.6%	91.6%
Negative	Doesn't help	-	6.1%	3.6%
	Against for administrative reasons	-	4.1%	2.4%
	Unspecified negative	-	4.1%	2.4%
	Total negative opinions	-	14.3%	8.4%

In general, the teachers who identified aspects of the program that could be improved were those with bilingual assignments. Half of the respondents thought more bilingual teachers would improve the program, whereas an additional 29% thought that distribution of texts could be improved. A small percentage of the responses (7.1%) related to the importance of extending the bilingual education methodology to the upper primary grades.

Teachers were also asked to describe how they would support multiculturalism in their teaching. Twenty-two percent said that it couldn't be taught and 21% said that they didn't know or would need special training. The remainder suggested using the experience of the students but did not specify how this would be accomplished (17%), engaging in activities with the community (15%), dealing with similarities and differences (7%), or using the language of the students (19%).

5. Interactions with Students

The interactions of teachers with students are, perhaps, the most important aspect of the teaching-learning process. It is the opportunities to interact with the subject matter that teachers create for students that define learning. It is generally agreed that the greater possibilities that children have for participation in the classroom, and through such participation to actively manipulate academic content, the more likely they are to master a subject. Thus, teacher-student interaction was investigated in several ways. Equity was measured by examining the access that boys and girls had to

the teacher through initiating interactions or being called on. Breadth of participation was measured by determining the number of children in a class who actually participate during a day. Finally, language use by teachers at different grade levels was measured to examine students' access to academic content in a language that they could understand.

Table 12 shows the level of interaction with the teacher by students of different genders. As can be seen, teachers of both genders generally were more likely to recognize attempts to initiate interactions (IAP) by boys than girls. However, female teachers were more likely to recognize girls. When the tendency to call on girls was examined, female teachers were again more likely to call on girls than their male colleagues. Again, the ratio of participation of boys to their presence in the classroom was higher with teachers of both genders. As might be expected, there was little change in the indices when examined by other characteristics of teachers, since the population was the same as that of males and females. Boys were consistently favored over girls in both their ability to initiate interactions with the teacher and the frequency with which they were called on.

Table 12: Index of Participation in Student-Teacher Interactions by Gender

Index	Girls		Boys	
	IAP	IRP	IAP	IRP
Female Teachers	0.73	0.99	1.29	1.05
Male Teachers	0.64	0.85	1.23	1.12
Bilingual Appointment	0.73	1.04	1.19	1.05
Regular Appointment	0.66	0.85	1.29	1.11
Oral Bilingualism	0.67	0.8	1.27	1.11
Monolingual	0.74	0.96	1.22	1.03
Mayan Teachers[1]	0.65	0.95	1.28	1.09
Ladino Teachers	0.76	0.83	1.21	1.09
Multiethnic Teachers	0.78	0.84	1.21	1.16
Total	0.7	0.9	1.24	1.09

[1] Teachers' self-identification

The degree to which teachers allowed all children to participate in the class was also investigated. Table 13 shows the percentage of all children who initiated interactions with the teacher in the first case (IOP) and who were called on, in the second case (IBP). As can be seen, a small percentage of the classroom population actually participated through interactions with the teacher. Less than a third of the students initiated interactions with the teacher and fewer than 50% of all children were called on. Again, the percentages were slightly higher for female teachers and for teachers with specific characteristics, but not significantly different. The percentage of first graders who participated was lower than other grades. Twenty-seven percent of first graders initiated interactions with their teachers, whereas 37% of the total number of first graders were called on by teachers.

Table 13: Level of Student Participation by Teacher Characteristics

Variables		Student Initiates	Teacher Initiates
		IOP	IBP
Teacher Gender	Males	0.27	0.42
	Females	0.34	0.47
Type of Appointment	Bilingual	0.28	0.44
	Regular	0.32	0.44
Oral Bilingualism	Speaks well	0.22	0.32
	Speaks okay	0.41	0.55
	Does speak	0.29	0.49
Ethnic Self-Identification	Ladino	0.28	0.5
	Mayan	0.28	0.42
	Both	0.32	0.49
Average Total		0.3	0.44

Tables 14 and 15 demonstrate that teachers had a strong tendency to use Spanish in the classroom when interacting with students. Across all grades, 65% of the interactions of teachers with bilingual appointments and 94% of those of teachers with regular appointments took place in Spanish. There was a consistent trend to decreased use of Spanish among teachers in higher grades. This was true for teachers of all the lower primary grades who had bilingual appointments. With the exception of preschool, it was also true for teachers with regular appointments.

The greatest drop in the use of the mother tongue occurred between preschool and first grade, where there was a decrease of over 30% in the use of Mayan. In subsequent grades the decreases were between 5% and 13%.

Table 14: Language Use in Student-Teacher Interactions

Language	Bilingual Teacher	Regular Teacher
Spanish	65.4%	94.0%
Maya	22.2%	0.4%
Both	0.9%	1.6%
Non Verbal	11.5%	3.9%

Table 15: Use of Mayan by Bilingual Teachers by Grade

Grade	Bilingual	Regular	Total
PSch	75.5%	12.5%	60.0%
1st.	43.1%	36.4%	40.1%
2d.	38.4%	28.8%	33.1%
3rd.	25.0%	24.3%	24.4%

6. Participation In School Life

The possibility to interchange ideas with colleagues based on personal experience was considered one form of participation. At the time of the study, DIGEBI had 24 Quality Circles organized in the department of El Quiche. Teachers reported a high participation in the meetings of the circles. More than 90% of the teachers said that they had participated in a quality circle and they estimated the participation at the last circle that they had attended at 92% of the membership. There was no difference in participation by the type of appointment (bilingual or regular) that they teacher held.

In terms of working with the community, length of time in the school had a strong effect on the degree of involvement of teachers. As shown in Table 16, the majority of teachers who had been in their schools less than two years had not developed any type of project with parents. This percentage was reversed with those teachers who had been in their schools for more that two years.

Table 16: Years in the School and Work with the Community

	Developed projects with parents	
Years in the School	No	Yes
Two or less	25	13
	59.5%	29.5%
More than two*	17	31
	40.5%	70.5%

X2, p=0.005

Distance from the school seems to be a determining factor in teacher involvement with the community. Table 17 shows that proximity is significantly related to participation. Almost two-thirds of the teachers were engaged in projects with parents in schools that were relatively close to a municipal center. This percentage was reversed for teachers whose schools were greater distances from a municipal center. There also appears to be a gender factor influencing teachers' involvement with the community. As can be seen from Table x18, female teachers are significantly less likely to engage in projects with the community regardless of the distance of their schools from municipal centers. This does not appear to be the result of less time in the school, as female and male teachers had the same average number of years of service in a school.

Table 17: Distance from School and Community Involvement

	Developed Project	
Distance	No	Yes
Near	20	33
	37.7%	62.3%
Far	13	7
	65.0%	35.0%
Total	33	40
	45.2%	54.8%

X2, p=0.03

Table 18: Development of Projects by Distance and Teacher Gender

Distance	Developed Projects		
	Male Teachers*	Female Teachers**	Total***
Near	86.7	59.3	62.3
Far	60	11.1	35

*X2, p=0.06
**X2, p=0.015
***X2, p=0.03

C. Students

1. Language Use

The preferred language of students in the classroom was Mayan. Mayan was the only language used in 52.4% of all observed interactions of students in the classroom. This was 75% of all verbal interactions. An additional 7% of interactions involved the use of both Mayan and Spanish. Only Spanish was used in 12.5% of all student interactions.

When student verbal interactions were examined in terms of speech partner, the patterns of language use varied. As shown in Table 19, the use of Mayan predominated in interactions among students. Such use was especially high among female students, as 83% of all verbal interactions involved the use of Mayan. With males, the total was 76%. Only a third of the interactions with teachers involved the use of Mayan.

Table 19: Student Language Use by Speech Partner

Language/Speech Partner	Mayan	Spanish	Both Languages
Teacher	29%*	42%	4%
Female Student	78%	16%	5%
Male Student	65%	18%	11%
Group	41%	22%	16%

* Percentages do not equal 100% as non-verbal interactions are not counted

As would be expected, Mayan was the predominant language used in the home. More than 80% of the students interviewed reported using Mayan exclusively with

grandparents, and with both their father and mother. The percentage that used Mayan exclusively with brothers and sisters dropped slightly to about 70% of all students. Exclusive use of Spanish with any family member was reported by less than 5% of the students.

2. Classroom Interactions

Students participation was examined in several ways. The learning opportunities provided to children by the teacher, either through recognizing a student's attempts at engagement or by calling on an individual student were analyzed by student and teacher gender and by the percentage of the entire class that actually engaged in interactions with the teacher. In addition, the nature of the interactions were examined by determining those which involved original production by students as opposed to those in which students merely copied material or listened to presentations by the teacher.

In addition to language use, student interactions were analyzed for level of participation and relationship to the subject matter being taught. Table 20 shows the level of participation in interactions with the teacher for boys and girls. In terms of the active participation index (IAP), in which the student initiated the an interaction with the teacher, boys predominated This was true for both female and male teachers, although female teachers were somewhat more likely to recognize female students. Boys also predominated in interactions initiated by the teacher with individual children (IRP). However, among female teacher the tendency to call on girls was greater than among their male colleagues.

Table 20: Index of participation in classroom interactions

	Girls		Boys	
Index	IAP	IRP	IAP	IRP
Female teachers	0.73	0.99	1.29	1.05
Male Teachers	0.64	0.85	1.23	1.12
Total	0.7	0.9	124	109

While the above indices show the relationship between gender and participation they do not show how many members of the class have the opportunity to participate in interactions with the teacher. Thus, a second set of indices were constructed to examine general levels of participation allowed by teachers. As mentioned in the discussion of teachers, the first (Index of Openness to Participation) is the number of children relative to all the students in the class who initiate interactions. The second (Index of Breath of Participation)is the number of children relative to all of the students in the class who are recipients of interactions initiated by the teacher. As can be seen

from Table 21, the percentage of children participating in the classroom was relatively low. Only 30% of all students initiated interactions with the teacher and slightly more than 40% were called on by the teachers. Female teachers were somewhat more inclusive than males, probably as a result of their greater attention to female students, but differences were slight.

Table 21: Language Use of Students by Speech Partner

Partner	Maya	Spanish	Both
Teacher	29.0%	44.9%	4.3%
Girl	77.8%	15.7%	4.6%
Boy	64.5%	18.4%	10.5%
Group	40.5%	21.6%	16.2%

Interactions that engendered original production by students made up 25% of all interactions. Ten percent of these related to solving math problems either orally or by writing on the blackboard. Fifteen percent of a the observations were of children involved actively in reading out loud or writing original phrases or sentences. Sixty-six percent of the observations involved passive activities. These were almost equally divided between copying (34%) and listening to the teacher (32%). The remaining interactions, approximately 9% of the total, involved transition activities not directly related with subject matter. These percentages were similar for boys and girls.

3. Feelings about schooling

Students were asked about the aspects of school that they liked and disliked. As can be seen in Table 22, students were generally favorable toward their schooling. The majority of students responded that they liked to “study” or ‘learn,” with 57% of the responses being of this type. Among students who were more specific in identifying preferred subject matter, 29% of the responses mentioned reading and writing as the aspect of school that they liked. Mathematics was the only other subject matter specifically identified. It was mentioned twice, which accounted for 2% of the responses. Understanding another language was mentioned three times, whereas the remainder of the responses related to the environment of the school such as playing, seeing friends, or having the opportunities to eat. This category accounted for 4% of the responses.

Table 22: Students' Feelings about School

Categories	Likes		Dislikes	
	No.	Percent	No.	Percent
Study/learn	59	57%	--	--
Read/write	29	29%	2	2%
Mathematics	2	2%	6	6%
Other languages	3	3%	7	7%
Social Studies	--	--	4	4%
Arts	--	--	6	6%
School Environment	4	4%	11	11%
Don't know/inappropriate	5	5%	59	57%

* Percentages may not total 100% owing to rounding

When dislikes were examined, the majority of the responses (57%) were statements that the children liked everything or couldn't identify aspects of their school experience that they didn't like. No specific negative aspects of schooling stood out among the responses, as with the exception of school environment aspects such as fighting, playing and the food served (11%), no aspect was identified in more than 7% of the responses.

4. Multiculturalism

Given the emphasis of both DIGEBI and the Peace process on creating a multicultural society, it was felt that baseline data on the student's perceptions of cultural identity would be valuable to DIGEBI in planning professional development activities and instructional materials in this area. Thus, students were asked questions about what they thought a Mayan was and how they felt dealing with someone who spoke a language other than their own.

Of the students interviewed, 35.9% answered the question "What is a Maya?" and the remainder of the students either did not respond or indicated that they did not know. This shows that the concept of Maya is not seen by most students in El Quiche as a means of identification. When the same students were asked "What is a Ladino?" slightly more than half of the students (56.3%) responded to this question. It is clear that for these students, the term Ladino is more familiar than the term Maya. Table 23 shows the categories of the response for those children responding to each question.

Table 23: Student Definitions of Maya and Ladino

CHARACTERISTICS	What is a ....?	
	Maya (%)	Ladino (%)
An authority figure/superior	5.4	24.1
Someone who speaks Spanish/speaks correctly	2.7	27.6
Someone different	2.7	1.7
Psychological or physical characteristics	2.7	20.7
Self-identification	13.5	5.2
Elders/people for the past/religious leaders	37.8	---
Someone who speaks Mayan	8.1	
Someone/a person	18.9	20.7
Stereotype	8.1	

The category of response used most frequently (slightly more than a third) to describe a Maya was linked to the perception of Mayans as ancient people or as elder or religious leaders. Only slightly more than one in ten students identified themselves as Maya, and fewer than one in ten said that speaking a Mayan language identifies Mayans. The students showed a disparate perception of identity, using nine clearly distinguishable categories, the majority of which had no personal connection, to describe a Maya.

In contrast, the same students used only six categories to describe Ladino, and four of these categories accounted for over 90% of the responses. The answers indicated a positive perception of ladinos, as the categories “authority figure/superior” and “speaks Spanish correctly” were used in more than half of the cases.

When the responses were examined in terms of the language that student spoke with their mothers, it was found that the category “authority figure/superior” was used only by students who speak a Mayan language with their mothers. On the other hand, only children who spoke Spanish with their mothers identified themselves as ladinos. Both groups of children used the categories “speaks Spanish/speaks correctly” and psychological characteristics equally. Students also used the category “elders/from the past/religious leaders” in a similar way, although it was more common among students who used a Mayan language to speak to their mothers. Only those who spoke a Mayan language with their mothers self-identified as Maya. However, this response was rare.

Students were also asked how they felt about those who did not speak their language. Responses were coded as positive (such as responses indicating that speaking a different language was good or desirable), negative (responses indicating that the inability to speak the respondent's language was negative, a limitation, or something which should be corrected by learning the language), and expresses no opinion. A fourth category of responses were those in which students responded by providing and explanation. Two out of every three students who spoke Spanish with their mothers had a negative opinion of those wh didn't speak their language. Approximately one-third of the students who spoke Mayan with their mothers expressed negative opinions of those who speak another language, and a third held positive opinions.

While the majority of students interviewed seemed to lack well-defined ideas about Mayan identity, they did have more developed opinions about the distinctive characteristics of ladinos. Being Mayan tended to be identified with a sense of the past, something negative or of little value, or with stereotypes. Only a small percentage of children identified themselves as Maya.

5. Political Awareness

In order to examine understanding of the political process, the sample of students was asked a series of questions about local and national politics. One set of questions revolved around the role of a mayor and what an individual had to do to become a mayor. The other focused on the national arena, in terms of who was the president of the country, how did one become president, and what were the requirements of the job.

Seventy percent of the students responded positively when asked if they knew what a mayor was. The percentage was higher for girls, as 84% of girls responded positively compared to 55% of boys. The percentage was similar for students who knew who the president of the country was. Fifty-five percent of the sample could identify the president by name and another 7% could identify the president by party. Again the percentage of girls who identified the president was higher than that of boys.

As might be expected, when the issues of how one becomes an elected official and what are the functions of that official, the students were better able to articulate their understanding of question with the local political position. Table 24 shows that 40% of the sample were able to identify rather unspecified actions such as work, study or being a good person as related to becoming a mayor, whereas 22% identified actions related with the electoral process.. These percentages dropped to 34% and 14% respectively when related to the president. Girls and boys were similar in the distribution of their responses to this question.

In terms of describing the work of an elected official, there were greater differences by gender. A greater percentage of girls than boys were able to identify

aspects of governance (developing infrastructure improvements, resolving conflicts, meetings, paperwork, supervision) with both mayors and the president.

Table 24: Students' Political Awareness by Gender

Question	GIRLS		BOYS		TOTAL	
	No.	Percent	No.	Percent	No.	Percent
How to become a mayor?						
-work/study/traits	16	40%	11	39%	27	40%
-election	9	22%	10	36%	20	29%
-don't know/unrelated	15	38%	6	15%	21	31%
What is the work 5of a mayor?						
-unspecified work/help	9	21%	10	28%	19	24%
-governance	27	63%	16	46%	43	55%
-don't know/unrelated	7	16%	9	26%	16	21%
How to become president?						
-work/study/traits	15	33%	14	35%	29	34%
-election	7	16%	5	12.5%	12	14%
-don't know/unrelated	23	51%	21	52.5%	44	52%
What is the work of the president?						
-unspecified work/help	14	31%	12	31%	26	31%
-governance	17	38%	8	20%	25	30%
-don't know/unrelated	16	36%	19	49%	35	40%

D. Community

The international research on parent participation shows positive effects are brought about by parents emphasizing literacy and other academic achievements in the home. Likewise, involvement of parents and other community members in school governance generally has been associated with successful program implementation. As part of the baseline study, the general characteristics of parents in terms of years of schooling, numbers of children attending school and the like were gathered. In addition, parents were asked about their participation in the schooling of their children, their attitudes toward bilingual education, and their expectations for their children.

1. Parent Characteristics

A slight majority of fathers had attended school, whereas only about a third of the mothers interviewed had any schooling. As shown in Table 25, those who did attend school tended to persist to the upper grades. About two-thirds of males and slightly more than a third of females said that they were able to read and write. These percentages were a little higher than those for school attendance, as 15% of those who had not attended school stated that they could read and write. This compared to 3% of those who had attended school who said that they were not literate.

Table 25: Education and Literacy of Interviewed Parents

	Fathers	Mothers
Attended school	57.6	38.2
Average of highest grade reached of those who ever attended school	4.33	3.33
Can read and write	66.7	39.4

As shown in Table 26, there was a strong relationship between being literate and chose of a mate among the parents interviewed. All literate mothers had husbands who knew how to read and write. Similarly, all illiterate men had illiterate wives. A majority of illiterate women also had illiterate husbands. Only with literate males does the relationship fail to hold, as a slight majority of literate fathers had illiterate wives.

Table 26: Literacy and Choice of Spouse

		Does your spouse know how to read and write?		
Do you know how to read and write?			Yes	No
	Father	Yes	47.6%	52.4%
		No	-	100%
	Mother	Yes	100%	-
		No	40%	60%

The average family size was about four and a half children of which slightly more than two were of school age. Table 27 suggests that fathers consistently described the participation of their daughters in schooling as lower than that of their sons. Mothers tended to describe the participation of offspring of genders as similar. On the average,

only about 80% of the children of school age were enrolled in school, according to parents. Both parents estimated that girls' participation was lower than that of boys.

Table 27: Average Family Size and School Participation

	Mother	Father	Total
Average number of children	4.59	4.97	4.78
Boys	2.26	2.64	2.45
Girls	2.32	2.33	2.33
Boys between 7 and 14 years of age	1.35	1.32	1.34
Girls between 7 and 14 years of age	1.24	.79	1.03
Boys currently enrolled in school	.97	1.19	1.08
Girls currently enrolled in school	1	.66	.84
Percentage of school-age boys in school	71.9	90.2	80.6
Percentage of school-age girls in school	80.6	83.5	81.6

2. Parent Participation in Children's Schooling

A high percentage of parents of both sexes had participated in school activities during the year. Ninety-three percent of fathers and 85% of mothers stated that they had assisted the school during the year. Tables 28 and 29 show that although participation was high, such participation was generally limited to provision of labor of other in-kind contributions. The type of support was largely gender-specific, with men engaging in physical improvements and women preparing food.

Table 28: Types of Assistance Provided to the School by Gender

Types of Assistance	Mother	Father	Total
Physical improvements	8.9%	41.2%	26.0%
Preparation of food	42.2%	7.8%	24.0%
Economic contribution	35.6%	29.4%	32.3%
Cleaning/maintenance	6.7%	9.8%	8.3%

Unspecified	4.4%	5.9%	5.2%
Committee member	-	5.9%	3.1%
Civic events	2.2%	-	1.0%

X2= 25.8, p=0.000

When asked specifically about involvement in student learning or school management, gender differences were also found. Mothers were likely to be involved in general cleaning and the like whereas fathers were concerned with disciplining their children when academic progress was not satisfactory. Involvement in school management was almost non-existent, making up only 3% of the responses.

Table 29: Involvement in Student Learning and School Management by Gender

	Mother	Father	Total
School maintenance	52.1%	21.2%	36.0%
Help children (academic advances, discipline)	18.8%	51.9%	36.0%
Supervision of school/teacher	2.1%	3.8%	3.0%
Varied meetings	27.1%	23.1%	25.0%

X2= 14.7, p=0.002

3. Opinions of Bilingual Education

Knowledge of bilingual education was limited among the respondents. Only 47% of the parents stated that they were familiar with bilingual education. Slightly more fathers (51%) than mothers (45%) knew about the program. Of those familiar with the program, opinions were generally favorable but unspecified.

When asked to define a Maya, parents responded that these were the original inhabitants of the land who continued the traditions of their forebearers such as working the land, speaking a Mayan language, or wearing traditional clothing. Others saw being Mayan in a more negative sense of not speaking Spanish. Issues of bilingual education and multiculturalism were somewhat better defined when parents were asked what constituted a good education. Most responses were in terms of preparation for work. However, responses also included knowing and practicing the values of one's own culture, strengthening one's personal and national identity, and speaking two languages well (Vásquez González, et al, 1999).

4. Expectations for Children

Parents had generally high expectations for their children. The majority expected their children to complete primary school and a third expected children to complete secondary school. Expectations were very similar for both boys and girls. In addition, mothers and fathers had very similar expectations for their children.

Table 30: Parents' Educational expectations for their Children

Parent´s Expectations	Fathers		Mothers		Total	
	Boys	Girls	Boys	Girls	Boys	Girls
Some primary school	3.2	3.7	7.2	7.2	5.1	5.5
Complete primary	56	47.8	44	52.2	42.4	41.8
Junior secondary	9.7	7.4	7.2	3.6	8.5	5.5
Complete secondary	35.5	40.7	21.4	21.4	28.8	30.9
Depends on resources	3.2	3.7	10.7	10.7	6.8	7.3
As far as children want	3.2	3.7	7.1	7.1	5.1	5.5
As far as there are grades	-		3.6	3.6	1.7	1.8
Don't know	-		3.6	3.6	1.7	1.8

III. CONCLUSIONS AND IMPLICATIONS

A. Conclusions

Physical conditions in the bilingual rural schools of El Quiche are generally adequate in terms of space, protection of the children from the weather while studying, and availability of facilities such as potable water and latrines. They do not, however, offer an environment that is highly supportive of learning, owing to lack of electricity in the majority of schools, leaks in inclement weather and the like. This is seen in the overall system performance statistics where student promotion is uneven with the greatest difficulties being encountered at the first grade level, where only 53% of the boys girls are promoted compared to more that 77% of children in other grades.

The lack of ideal physical conditions for learning are exacerbated by teachers' linguistic abilities and interaction patterns in the classroom. The number of teachers with bilingual appointments is insufficient to meet the needs of DIGEBI and the insufficiency increases at each grade level. Although teachers with bilingual appointments have a better knowledge and are better able to implement the bilingual multicultural education program than teachers with a regular appointment, the quality of implementation must be greatly improved to meet the goals of the program. After preschool, teachers use Mayan less than 43% of the time and the percentage decreases at each grade level. In addition only 44% of bilingual teachers are familiar with half or more of the key elements of DIGEBI and only about 25% of the teachers could define clearly aspects of multiculturalism

Teachers' interactions with students in the classroom allow little opportunity for student participation. Teachers favor boys over girls in the classroom. However, less than half of the children of either gender in a classroom interact with the teacher on a given day. Thus, many of the students are unlikely to have meaningful contact with the subject matter, limiting their opportunities to learn. The percentages of children who interact with the teacher are lowest in first grade.

There is a discrepancy between language of instruction and children's language preference in the classroom. Mayan is the preferred language of students of both genders, except when interacting with teachers. Similarly, over 70% of the students reported interacting exclusively in Mayan with family members and less than 5% interacted exclusively in Spanish with their families.

Despite their limited participation in the classroom, students in El Quiche are generally favorable toward their schooling and reading is the subject most often cited as enjoyable. Mathematics, in contrast, is not commonly identified as a favorite subject. Learning a second language is not viewed negatively by most students

Political awareness is relatively high among the student of El Quiche, as a majority of students know what a mayor is and over half could specify functions of government that are carried out by a mayor. Knowledge of the national political

situation was somewhat lower than the local one but still relatively high. Girls had greater political awareness than boys in both cases.

Teachers' participation with the community is related to both time in the school and distance. Female teachers are less likely than males to undertake projects regardless of distance or time in the school.

Even where teachers work with the community, parents have little involvement in either school management or student learning in the context of the school. Their participation is limited to physical labor or other in-kind contributions and the only academic input is to discipline their children for failure. Participation is by rather distinct gender roles with women preparing food and doing cleaning and men making infrastructural improvements.

There is little consensus among teachers, students and parents on what it means to be a Mayan or approaches to teaching in a multicultural manner. There is a strong tendency among students to relate being a Mayan to someone who is inferior or something that existed in the past.

B. Implications

Although DIGEBI's goal is a maintenance program that prepares students to successfully function within two cultures and languages, the de facto model being implemented is one of transition. Not using the preferred language of the children runs the risk of limiting their understanding of the subject matter, as well as endangering the full development of literacy in the first language. Teachers might be encouraged to make greater use of the first language through in-service training which is conducted entirely in Mayan. Such training would serve as a model for teachers in the classroom.

Involving all children in classroom activities must be a priority for schools in El Quiche if children are take advantage of the subject matter. In the short run, this might be encouraged by providing teachers with simple exercises such as having an area with stones for each child. When a child participates in an activity s/he retrieves the stone and the number of stones remaining at the end of the day are examined and discussed. Over a longer period, it would appear that DIGEBI training should focus on two basic areas: decentralization/individualization of instruction and use of the mother tongue in providing academic content. Practice in both areas would help to meet DIGEBI's goals of a child-centered bilingual pedagogy.

There must be a focus on first grade in all refinements in pedagogical practice. This is the level where the greatest wastage to the system occurs and a concentrated effort to aid children in being successful in first grade can greatly increase the efficiency of schooling in El Quiche and elsewhere in rural Guatemala.

Integrated curriculum components in both the first and second language that focus on reading and writing and integrate basic mathematics skills into the content

might be a refinement that can take advantage of students positive perception of reading. Similarly, the findings suggest that emphasis on the development of curricular components dealing with identity should be a strong focus of curriculum refinement. This would include promoting positive self-image, focusing on activities that highlight the similarities and differences in children's lives, recognizing the contributions of each student as a unique individual and including textual information that depicts both Mayans and ladinos from different social levels with different occupations and with a range of human characteristics.

Students' political awareness suggests that focusing on the student government especially among girls and building discussions of political process into classroom activities, perhaps through reading the newspaper can positively affect student classroom participation.

The importance given to their children's education by parents can be taken advantage of through information campaigns that stress the role of bilingual education in meeting parental expectations. Interactive methodologies such as those used by NEU or PRONADE or others like action research might be used to expand the types of participation of parents in their children's schooling and their knowledge of bilingual multicultural education. If teachers were to lead in implementing such methodologies, however, non-monetary incentives might be needed to encourage teachers to remain in the same schools for more than one or two years.

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