

**Improving Educational Quality (IEQ) Project**

**TEACHER LANGUAGE PROFICIENCY, TRAINING, AND  
LANGUAGE USE IN A GUATEMALA BILINGUAL CLASSROOM**

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## INTRODUCTION

This work analyses the initial impact of an in-service teacher-training program for teachers working in a rural bilingual context with mostly indigenous Mayan students in Quiche, Guatemala. The training program is part of a USAID/G-CAP funded project that aims to increase access to bilingual education for indigenous rural children in this department. The focus of the analysis is to see whether the training program changes teachers' usage of the local language in such a way that this language is used more as language of instruction, a key aspect for the success of the bilingual program.

Guatemala signed Peace accords in December 1996 that ended a 36-year-old civil war. One of the main aspects of this accord was to universalize access to primary education, and to reform the educational system to deliver an education of quality, using the mother tongue as language of instruction, improving the teaching of Spanish as a second language, respecting cultural background and including the different cultures into the curriculum. Guatemala is a multilingual, multiethnic and multicultural country, where 24 different languages are spoken, including Spanish, the only recognized official language. Mayan languages form the bulk of these languages, 21 in total, and a Mayan language is spoken as mother tongue for a little than 42% of the population.

The in-service teacher program being analyzed works in the northwestern department of Quiche. In this department there are speakers of eight different languages, but the majority are K'iche' or Ixil speakers. This department suffered the most the effects of the civil war, with thousands on deaths, disappearances, and refugees, both internal and external. The training program main targets are bilingual teachers, both certified and non-certified. However, every non-bilingual teacher who volunteers to take the program is accepted, as there are many Spanish speaker only teachers teaching to Mayan speaking students. Teacher certification is done by the National Directorate of Intercultural Bilingual Education (DIGEBI), the Ministry of Education office in charge of bilingual education.

The bilingual education program started as a program to teach students Spanish in the classroom during the early 60's. This program made no effort to teach the mother tongue, but use the mother tongue to teach Spanish. Before, the public education system forbid usage of the mother tongue in the classroom and there are many reports that Mayan students were physically punished when using their mother tongue at school, a situation that still happens now and then in some schools.

In the early 80's a pilot program for bilingual education was started, with funding from USAID. This program covered 10 schools in the four main Mayan languages, spoken for about 80% of all Mayan speakers – K'iche', Mam, Kaqchikel and Q'eqchi'. The success of the pilot program motivated an extension and a bigger program was created by the MOE - Program for Intercultural Bilingual Education (PRONEBI), covering some 400 schools in the same four languages. In the early 90's the program was further expanded to 8 additional Mayan languages. In 1995, the program status was

change to a Directorate, which is the current status. Nowadays the program has certified bilingual teachers in 18 languages, including Garifuna, a non-Mayan language. Teachers total about 6000, working in over 1,600 schools, and attending 200,000 students, or about one in four of every Mayan student attending primary schools.

In many schools there is only one bilingual teacher, usually teaching preprimary or first grade. In the four original languages tends to be bilingual teachers beyond first grade, including second and third grade. However, most teacher teaching second or upper grades teach multigrade classrooms. Educational materials and textbooks exist for preprimary and first grade. Materials for the other grades are scarce, or do not exist. However, currently the MOE is designing and producing more textbooks.

## **The Training Program**

The in-service teacher program is part of the Access to Intercultural Bilingual Education Program (PAEBI, its acronyms in Spanish, henceforth, PAEBI). World Learning runs PAEBI, under a cooperative agreement with USAID/G-CAP. The program provides teacher with training on three big areas: Mayan contents, teaching strategies and techniques, and content mater. The training lasts 25 weeks, and teachers attend Fridays after finishing classes, and Saturdays. Course work requires that teachers read different materials during the week (called modules, prepared by project personnel) and also requires that apply their new knowledge and skill in their classroom. In the weekly sessions, teachers receive lectures, share learning experiences and work with the modules.

Teacher enrollment is voluntary. As an additional al incentive for teacher to participate, PAEBI established a separate agreement with a local private university – Rafael Landivar University, to certify the training program, given university credits equivalence, equals to one semester toward a university degree as a bilingual teacher. As part of the program, teachers’ facilitators visited classroom regularly, both to help teachers when applying the new skills and to monitor their progress.

Courses related directly to this study include teaching the mother tongue, both how to teach and attitudinal changes deemed necessary to actually teach the mother language, how to use the mother tongue as language of instruction, as well as Mayan culture and Mayan mathematics.

## **METHODOLOGY**

### **SAMPLE**

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The sample was formed by 54 public rural bilingual schools. Schools were selected at random. In Guatemala, once a school has a certified bilingual Mayan-Spanish teacher, it is considered a bilingual

school. All bilingual teacher, certified or not, were include in the analysis, whereas non-bilingual teachers were excluded, as they cannot used student’s mother tongue. Out of the 243 teachers observed and interviewed, data from 177 teachers was used from this analysis. These teachers attended over 5000 students. Table 1 details these teachers’ gender, type of appointment, and participation or not of the in-service training program.

In each grade two students, a girl and a boy were singled out to be observed six times through the day, three times before the recess and three times after it. In total, 254 girls and 254 boys were observed. Of them 216 boys and girls had teachers participating n the in-service training program and 292 students had teachers that did not participate of this program.

**Table 1: Characteristics of teachers in the sample**

| Participated in in-service training program | Type of appointment         | Gender of Teacher |      | Total |
|---|-----------------------------|-------------------|------|-------|
|   |                             | Female            | Male |       |
| Yes   | Certified bilingual teacher | 19                | 22   | 41    |
|   | Regular certified teacher   | 13                | 24   | 37    |
|   | Total                       | 32                | 46   | 78    |
| No  | Certified bilingual teacher | 20                | 19   | 39    |
|   | Regular certified teacher   | 36                | 24   | 60    |
|   | Total                       | 56                | 43   | 99    |

## INSTRUMENTS

Four different instruments were use: a structured observation guide of interactions between teachers and students, a teacher’s interview protocol, a student observation guide and a classroom map.

The structured observation guide allowed to register who initiates the interaction (teacher or student), student data when the student initiated the interaction (grade, gender and ethnic background), the context in which the interaction was taking place, the language used in interaction, the receptor of the interaction, and the receptor’s response to the interaction. The student observation guide allowed registering this information, but focusing on a single student. It also allowed registering the specific learning behavior the student was involved in. The teacher interview was an extensive interview that explore diverse aspects, among them, teacher in-service training, ethnic background, linguistic ability and teacher’s experience. The classroom map allowed registering every student’s position, gender, grade and ethnic background. This information, in turn, was used when used the structured observation guide.

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**PROCEDURE**


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Field data collectors were high school graduates, most of who had a teacher certificate. About half of the field data collectors were university students in education or social sciences disciplines. All had previous experience as data collectors. All had to approve a written and oral test on the local language. Personnel of DIGEBI gave the test. Field data collectors received training on the instruments during a week. Training included a detailed revision of each instrument, video clips of classes as source for practice, and role-playing. Practice on each observational instrument was repeated until each member of the group reached good inter-observer agreement with the trainers. Interview was practiced using role-playing until field workers were familiar with it, and with the question sequence.

A time sample procedure was devised, splitting the school day on six period of observation, three before the recess, and three after the recess. Table 2 details the observation protocol.

Field workers completed the classroom first and then when to make the first 10 minutes structured observation, followed by observations to students. The field data collector then moved to other classroom and repeated the observation procedure. When he or she observed just one classroom, a 15 to 20 minutes time lag was kept until the next observation period. The teacher interview was conducted during the recess or at the end o the school day.

**Table 2: Observation Protocol**

| <b>Instrument</b>            | <b>Number of observations</b>  | <b>Duration of each observation</b> |
|------------------------------|--|-------------------------------------|
| Classroom map                | 1, at the beginning of the school day  | About 15 minutes                    |
| Structured observation guide | 6, three before recess and three after   | 10 minutes each                     |
| Student observation          | Two student by grade, three observation of each student, three before recess and three after | About one minute each               |

Grades from preprimary to third grade were observed. Excepting preprimary and first grade, most teachers were multigrade teachers. When using the structured observation guide, all students interacting with the teacher were recorded, regardless of their grade.

Quality control, besides the training, included a field manual that field data collectors used at all times, as required, daily direct supervision by the project permanent staff, parallel observations, re-interviews, protocols reviews in the schools, and protocols revision at the end of the day.

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## ANALYSIS

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Observation instruments were designed to be OCR ready. Once all data instruments were collected, identification data was coded, and instruments were reviewed to ensure all were ready for scanning. For the teacher's interview, all close questions had been previously coded. Field data collectors transcribed teachers' answers to these questions into OCR ready answer sheets, at the end of each workday. Open questions were coded in the office, using a coded system developed for each question. Once coded, these answers were also transcribed to OCR ready answer sheets. The OCR procedure further allowed identifying mistakes, missing data and inconsistencies, which were corrected as appropriate.

Data was then exported to the SPSS file format. Statistical analysis included frequency analysis, crosstabs analysis and Chi square hypothesis testing. Several variables are used to conduct the analysis. First is having participated or not from the training program. When data was collected (in August, at the end of the school year), teachers were completing the training program, or have completed it the previous year. Type of appointment was also used to run the analysis. While all teachers were bilingual and native speaker of the local language, not all teachers has an appointment as certified bilingual teacher. Previous research conducted by the author, and others in Guatemala have shown that having the specific appointment makes a significant difference for using the mother tongue as language of instruction, teaching the language and teaching contents related to the Mayan culture. Regular teachers are not required to teach the mother tongue, and using the mother tongue as language of instruction is optional. The critical variables are whether teachers change their pattern of using the mother tongue as language of instruction, and if students also used their mother tongue when interacting with the teacher. Students' interaction with other students was also examined.

## FINDINGS

As in previous research, it was found that having an appointment as a bilingual certified teacher was the principal variable related to using the tongue as language of instruction.

However, those teachers who had participated from the training program used more the mother tongue as language of instruction (see Table 3).

Whereas regular teachers – non certified bilingual teachers- tend to use Spanish as language of instruction most of the time, those teachers participating from the training program tend to used mother tongue as language of instruction that the other teachers who did not participate of the program.

**Table 3: Usage of language by teacher when interacting with students, by appointment and training of teacher (Teacher initiates interaction)**

| Teacher's Appointment                    | Participated in training | Usage of language in classroom (%) when interacting with students |         |      |            |
|--|--------------------------|---|---------|------|------------|
|  |                          | Mayan   | Spanish | Both | Non verbal |
| Certified Bilingual Teacher <sup>1</sup> | Yes                      | 50.3  | 41.8    | 2.9  | 5          |
|  | No                       | 37.8  | 55.9    | 2.6  | 3.7        |
| Regular Teacher                          | Yes                      | 26.9  | 67.4    | 2.8  | 2.9        |
|  | No                       | 20.3  | 71.0    | 4.9  | 3.8        |

From previous studies it is known that certified bilingual teachers teaching lower grades, preprimary to second grade, tend to use more the mother tongue than teachers teaching third grade, and that there is not difference in the used of the language of instruction in the upper grader by type appointment. Therefore, data was analyzed by the grade the teacher was teaching. Participation in the training program made no difference in language of instruction used by certified bilingual teachers teaching preprimary, and both groups of teachers –participants and non-participants, used a Mayan language in 62% and 61%, respectively, of the interactions with their students. However, participation in the training program was associated with more use of the mother tongue as language of instruction by teachers teaching first grade (46% for participants, and 36% for non-participants), and by teachers teaching second grade (40% for participants, and 27% for non-participants). For teachers teaching third grade, no association was found between participating in the training program and using the mother tongue as language of instruction, and these teachers tend to use less a Mayan language as language of instruction. Upper grades teachers were not included, as the bilingual program only the lower grades.

When analyzing these results by gender of teachers, overall it was found that female teachers participating in the training program were slightly more likely to use the mother tongue (42.7% of interaction vs. 38.1%) in interaction with their students. However, no differences by gender were found when analyzing by grade.

Students' usage of language when interacting with their teachers was also examined. As when teachers initiates the interaction, teacher's participation in the training program was associated with more Mayan language used by students when interacting with their teachers, but only for certified bilingual teachers (See Table 4).

<sup>1</sup> X<sup>2</sup>, p < 0.01

**Table 4: Usage of language by students when interacting with teacher, by appointment and training of teacher (Student initiates interaction)**

| Teacher's Appointment                    | Participated in training | Usage of language in classroom (%) when interacting with teacher |         |      |            |
|--|--------------------------|--|---------|------|------------|
|  |                          | Mayan  | Spanish | Both | Non verbal |
| Certified Bilingual Teacher <sup>2</sup> | Yes                      | 47.2   | 42.9    | 0.7  | 9.3        |
|  | No                       | 38.3   | 52.1    | 2.3  | 7.3        |
| Regular Teacher                          | Yes                      | 19.6   | 72.9    | 0    | 7.4        |
|  | No                       | 22.3   | 63.9    | 2.4  | 10.9       |

Complementary to the structured observation guide that permitted studying teachers-students interactions, the student centered observation guide allowed to examine students' interaction with all member of the classroom, be it teacher or peers. All students tend to use more the mother tongue when interacting when peers, regardless of teacher's appointment or participation in the training program. However, students with certified bilingual teachers who participated in the training program used more the mother tongue than any other group of student, followed by student with certified bilingual teachers who did not participated in the training program. Likewise, students with regular teacher who participated in the training program used more the mother tongue than student's with teachers who did not participated of it, but to a much lower rate. Table 5 summarizes these results.

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<sup>2</sup> X<sup>2</sup>, p < 0.01

**Table 5: Usage of language by students when interacting with others, by appointment and training of teacher (Student centered observation)**

| Teacher's Appointment                    | Participated in training | With whom student interacts | Usage of language in classroom (%) when interacting with teacher |         |      |            |
|--|--------------------------|-----------------------------|--|---------|------|------------|
|  |                          |                             | Mayan  | Spanish | Both | Non verbal |
| Certified Bilingual Teacher <sup>3</sup> | Yes                      | Teacher                     | 64.1   | 24.2    | 3.1  | 8.7        |
|  |                          | A girl                      | 70.4   | 23.5    | 1.0  | 5.1        |
|  |                          | A boy                       | 70.5   | 18.4    | 2.3  | 8.8        |
|  |                          | Group                       | 57.9   | 20.8    | 11.9 | 9.4        |
|  | No                       | Teacher                     | 45.1   | 42.6    | -    | 12.3       |
|  |                          | A girl                      | 56.7   | 32.8    | 0.6  | 9.9        |
|  |                          | A boy                       | 61.0   | 23.6    | 1.9  | 13.5       |
|  |                          | Group                       | 51.6   | 30.2    | -    | 18.2       |
| Regular Teacher <sup>4</sup>             | Yes                      | Teacher                     | 41.9   | 46.7    | 2.6  | 8.8        |
|  |                          | A girl                      | 57.1   | 36.1    | 2.3  | 4.5        |
|  |                          | A boy                       | 48.5   | 23.6    | 4.1  | 15.5       |
|  |                          | Group                       | 22.7   | 30.2    | -    | 18.2       |
|  | No                       | Teacher                     | 34.3   | 50.8    | 4.2  | 10.7       |
|  |                          | A girl                      | 50.2   | 36.1    | 3.0  | 10.7       |
|  |                          | A boy                       | 44.5   | 41.2    | 2.1  | 12.2       |
|  |                          | Group                       | 46.0   | 47.6    | -    | 6.5        |

## DISCUSSION

One of the critical aspects for the success of bilingual education programs is that both languages be used as mean of instruction. One of the languages may not be used or may be used at a lower rate than required due to a variety of reasons. Among them, lack of training in how to use one of the languages, lower social status of one the languages and teachers having being educated in a second language are all present in the Guatemalan context.

<sup>3</sup> X<sup>2</sup>, p < 0.01

<sup>4</sup> X<sup>2</sup>, p < 0.01

The design of the training program being analyzed addresses some of these aspects, with the goal to improve teachers' skill to use their mother tongue as language of instruction, changing attitudes about this usage and providing content knowledge about the local culture. Results show that, overall, the training program improved usage of the first language as language of instruction by teachers.

However, several aspects are to be considered. The training program does not appear to benefit teachers who already have a high rate of usage of the mother tongue, or who used the mother tongue at low rates. Also, the training program does not appear to change the overall pattern of usage of the mother tongue from lower grades to upper grades, as it is used the most in the lower grades, showing a sharp decline in the upper grades, regardless of received training. This suggests that other aspects are involved, probably associated with the model of bilingual education actually implementing in the classroom, even though the curriculum calls for an additive model for the bilingual education program.

Results also show that students' usage of language in the classroom is clearly associated with teachers' usage, and that a training program may produce benefits in this regard. In light of the goal to maintain and /or protect Mayan languages, some of which are in danger of extinction as spoken languages, well design training programs may help to achieve this goal