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**Language and Education
in Latin America:
An Overview**

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Stella Tamayo

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**Language and Education in Latin America:
An Overview**

by

**S.M. Cummings
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Abstract

This paper provides an overview of bilingual education in several Latin American countries: Mexico, Guatemala, Peru, Bolivia, Paraguay and Brazil. Bilingual education is defined in this paper as instruction to minority groups through the use of their mother language and, progressively, a mainstream language, such as Spanish or Portuguese.

Studies have shown that the combination of providing education to minority groups in their own language and using teachers from the same group is highly effective. A bilingual program also increases learning when the group's history and perspective are included in the school curriculum. Other investigations show that bilingual education can have contradictory effects in the education process, depending on the child's language and socioeconomic status. Immersion programs -- such as the highly successful French Canadian immersion program -- are positive for middle-class students whose maternal language is prestigious; conversely, the immersion model is negative for lower-class students who speak a language of lower prestige. Bilingual education appears to offer a solution to the problem of repetition, dropout and low educational attainment among indigenous children.

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INTRODUCTION

This paper provides an overview of bilingual education in several Latin American countries: Mexico, Guatemala, Peru, Bolivia, Paraguay and Brazil. The indigenous groups in Guatemala, Peru and Bolivia have high visibility and make up large percentages of the population.

This section defines key terms and ideas to provide a framework for understanding the programs and their history. In Latin America, the majority of indigenous people are descendants of ancient American civilizations who subsist on farming such as the Andean and Central American Indians (Siguán and Mackey 1987: 58). The further removed from urban areas these groups are, the less likely they are to have access to education, whether bilingual or monolingual.

Bilingual education is defined in this paper as the instruction of non-Spanish or non-Portuguese speaking children and young adults through the use of their mother language and, progressively, a "mainstream" language, such as Spanish or Portuguese (Picón 1987: 96). Bicultural education has a broader connotation that implies that children, young adults, and adults of different cultural systems interact; each affirming their identity and attempting to enrich their own development, to make both an assimilation and a selection of cultural characteristics possible (Picón 1987: 96).

Bilingual education programs generally follow two models: "transition" or "maintenance." In the transition model, children are initially instructed in their own language, which is gradually replaced by the official language as the educational program progresses. The maintenance model utilizes both languages throughout the educational program (UNESCO 1987: 58).

Studies have shown that the combination of providing education to minority groups in their own language and using teachers from the same group is highly effective (Alford 1987: 494). A bilingual program also increases learning when the group's history and perspective are included in the school curriculum. These studies strongly support the position that increased and prolonged use of a native language is important to bilingual education (Fortune and Fortune 1987: 472). Other investigations show that bilingual education can have contradictory effects in the education process, depending on the child's language and socioeconomic status (Jung, Urban and Serrano 1989: 29). Bilingual immersion programs are positive for middle-class students whose maternal language is prestigious; conversely, the immersion model is negative for lower-class students who speak a language of lower prestige (Jung, Urban and Serrano 1989: 29).

Bilingual education appears to offer a solution to the problem of repetition, dropout and low educational attainment among indigenous children. Drawing on the success of a program employing bilingual promoters in 1965 during the *castellanizacion* program, Guatemala established a national bilingual education program (Morren 1988). Since 1979, the government of Guatemala and the United States Agency for International Development (USAID) have been working together to improve the quality of education for the indigenous population. Bilingual education has also been successful in other Latin American countries. The bilingual approach produces better results in tests of reading comprehension (Modiano 1973; Dutcher 1982; Miller

Table 1
Language and Literacy in Latin America and the Caribbean

Nation or Territory	Total Population ^a (in 1,000s)	Literacy Rate ^b (%)	Number of Languages	Number with 10,000+ speakers
Argentina	31,963	94 (1980)	23	9
Bolivia	6,993	50 (1982)	38	7
Brazil	150,052 (1989)	74 (1980)	208	7
Chile	13,173 (1990)	92 (1982)	7	2
Colombia	30,241	80 (1982)	78	7
Costa Rica	2,851	90 (1982)	10	2
Dominican Rep.	6,867	72 (1982)	3	2
Ecuador	10,204			
El Salvador	5,107	85 (1982)	23	9
French Guiana	115	63 (1982)	4	4
Guatemala	8,618 (1990)	84 (1982)	12	2
Guyana	811	55 (1990)	54	36
Honduras	4,802	85 (1982)	14	1
Mexico	82,734	57 (1982)	10	4
Nicaragua	3,622	80 (1986)	241	69
Panama	2,322	78 (1980)	7	3
Paraguay	4,039	80 (1986)	13	5
Peru	21,256	78 (1982)	21	5
Surinam	395	83 (1981)	85	27
Uruguay	3,060 (1987)	80 (1986)	18	6
Venezuela	19,246 (1989)	95 (1985) 86 (1981)	1 40	1 5

^a Total population figures are official estimates. Unless otherwise indicated, they are for 1988.

^b Literacy rates are based on the last official census figures for that country, for the population 10 years of age and older. Rates for Bolivia, Colombia, Guyana, and Surinam, which do not have a literacy question in their census are from Barbara Grimes, ed. 1988. *Ethnologue: Languages of the World*. Dallas, Texas: Summer Institute of Linguistics.

Source: Hornberger 1992, Table 1.

1982). That is, reading comprehension is greater for those students taught in bilingual schools where they first learn to read in their native language, and then transfer their reading skill to the second language (Spanish). These are the findings of a classic study by Modiano (1973), who was instrumental in developing the materials needed to provide bilingual schooling in Mexico (Miller 1982: 801), where the indigenous school system covers about 600,000 primary level students (DGEI 1993). Children in monolingual Spanish schools learned to read in their second language as they were learning to use their second language. This double burden is probably what accounts for their poorer performance in reading tests (Dutcher 1982: 25). Education in the vernacular language also improves and develops a student's native ability to learn a second language in Ecuador (Davis 1981: 240). Without taking sides in the debate over language

policy, it is worth mentioning that some advocate instructing students in their first language because the literacy skills acquired in one language can be transferred to other languages, and developing skills is easiest in the student's mother tongue (Dutcher 1982). Others argue that teaching students in their first language places them at a disadvantage for further educational opportunities. Moreover, it is not clear whether indigenous children, located mainly in rural areas, are disadvantaged educationally because of the language of instruction, or because of insufficient investment in physical facilities in school classrooms (Heyneman 1979).

MEXICO

The number of indigenous languages in Mexico is in dispute. In addition to the national language of Spanish, there are at least 56 languages with various regional dialects. Linguists have classified from 22 to 91 different languages (Modiano 1988: 314). Due to the variety of languages, their sociolinguistic characteristics have not been sufficiently studied and it is not possible to obtain a complete overview of the different ethnic groups. However, there are three major language families among the indigenous languages: Uto-Nahua, which is found mainly in the northern and central part of the country; Oto-Mangue, in the central area; and Mayan, in the central and southern regions (Modiano 1988: 314).

History of Mexico's Bilingual Education Programs

In 1951 the Ministry of Education established its first formal bilingual education program for monolingual indigenous people through a government-sponsored agency, the *Instituto Nacional Indigenista*. The Institute began field operations in Chiapas, where literacy was first taught in the mother language. The *Instituto Nacional Indigenista* has managed to provide considerable press coverage of its members' needs and views (Modiano 1988: 313).

The current formal education program for indigenous children is administered by the *Dirección General de Educación Indígena* (DGEI), a division of the Secretariat of Public Education created in 1970. Since 1983, the DGEI has only hired personnel considered to be indigenous and fluent in an indigenous language as well as Spanish (Varese 1990: 348). In fact, many teachers are fluent in more than one indigenous language.

DGEI's main objective is to provide bilingual and bicultural education for indigenous children at a national level, from kindergarten through grade six. At present there are approximately 23,500 teachers and 583,100 students (a student-teacher ratio of 25:1) in primary education, and approximately 9,600 teachers and 216,100 students (a student-teacher ratio of 23:1) in kindergarten (DGEI 1993).

Official estimates indicate that primary schooling is universal for indigenous children and *mestizos* (individuals whose race is a mixture of indigenous and Spanish ancestry), including those who live far from settled communities. In 1988, however, bilingual education advocates challenged those estimates and countered that there were as many as three million indigenous children who were not receiving schooling (Modiano 1988: 319). School enrollment varies from community to community and it is difficult to obtain an accurate idea of school coverage. While one community may have an enrollment rate of close to 100 percent, such as Oxchuc in Chiapas, another might have less than 50 percent of enrollment capacity, such as Chamula, also in

Chiapas (Modiano 1988: 319).

While the program continues to acquire teaching materials, linguists continue to study indigenous languages in Mexico for educational material development. By 1987, 50 percent of the proposed dialect studies had been achieved, 70 percent of the 35 grammar books were finished, about 15 dictionaries were available, and over 80 percent of the 56 languages had alphabets (Varese 1990: 351). Mexico, like most of Latin America, is recovering from an economic recession, and funding for school materials has fluctuated over the years.

A study of 1,600 children in the Chiapas area was done in 1964-1965. The children attended two kinds of schools. The first type was bilingual schools of the *Instituto Nacional Indigenista* where children began reading in their mother tongue and learned Spanish in the second year. Many of the teachers were indigenous without much formal education. The second type was monolingual schools of the state and federal school systems. Most of the teachers here were *mestizos* with the formal education required for public school teachers (Dutcher 1982: 23). Children in grade 3 from 26 schools within three tribal areas were matched on the basis of demographic factors and were given a specially designed 88-item reading test in Spanish. A significant difference was found in skill in reading Spanish in favor of the children taught in the mother tongue. In addition, the children seemed to prefer indigenous teachers and to have learned better from them (Dutcher 1982: 24).

Repetition and Dropout Rates

The information presented below describes the educational progress and achievements of indigenous and non-indigenous children. Given the pedagogic constraints of the national program, almost all indigenous students repeat a grade at least once, but more commonly twice (Modiano 1988: 320). Similarly, the dropout rate is high, especially after the children are old enough to make a contribution to family income.

In non-indigenous communities, 34 percent of the total population 14 years and older has not completed primary school, while in the indigenous communities this number increases to 71 percent. Other studies have estimated that only one in one hundred beginning first graders will complete primary education programs (Castillo and Valesco 1983: 97).

In a study which classified *municipios* by their proportion of indigenous inhabitants, differences were found in overall dropout rates and dropout rates for men and women (Panagides 1993). In *municipios* that are largely non-indigenous, the overall dropout rate is half that of *municipios* that are largely indigenous (see Table 2). In addition, as the *municipios* become more indigenous, the disparities between dropout rates for men and women become larger.

Parents' Attitudes

In a study of parents who speak Triqui, it was found that they believe primary school teachers should not speak a native language in the classroom because the child already speaks the native language at home. These parents also believe that the native language should be used for relations within the community. Spanish is more important in school because it is the language of progress: "Children should learn Spanish well so that they are well prepared for the

Table 2
Mexico: Primary School Dropout Rates

<i>Municipio</i> Group	Male	Female	Total
Below 10% Indigenous Population	32	36	34
10-40% Indigenous Population	53	59	56
40% and Above Indigenous Population	67	75	71

Source: Panagides 1993, Table 7.9. Sample restricted to those 14 years or older.

outside world" (Juarez and Montesinos 1988: 66). Some teachers disagree, however, and believe both languages should be taught because they are equally important, and aid in preserving the native culture. Educators and leaders in the Mexican indigenous education movement agree that "teaching of literacy should be carried out in the mother language with subsequent transition to the use of Spanish as a second language or medium of instruction" (Varese 1990: 350). However, low enrollment and high dropout rates show that many students do not benefit from currently available bilingual education programs.

GUATEMALA

Recent surveys show that between 30 and 50 percent of Guatemala's population is indigenous (Steele 1993; Patrinos and Psacharopoulos 1992). Besides the national language of Spanish, Guatemalans speak one of four major Mayan languages: K'iche', Mam, Kaqchikel and Q'eqchi'. These four language groups make up more than 75 percent of the total indigenous Guatemalan population (Carvajál, Morris and Davenport 1993: 60). There are 17 other fairly common languages and dialects in Guatemala (Morren 1988: 353). Researchers estimate that about half the Mayan language speakers also speak Spanish (Morren 1988: 353).

History of Guatemala's Bilingual Education

Early bilingual education programs were developed with the aid of foreign teachers and development assistance and followed the transition model (UNESCO 1982: 153). In 1965, the Ministry of Education adopted a program of *castellanizacion* and hired bilingual teachers to teach kindergarten children. In addition to teaching oral Spanish, bilingual teachers also taught students to read and write in their native language (Morren 1988: 354). Teacher prerequisites were completion of the sixth-grade, bilingualism in Spanish and a Mayan language, and passing a four-week course on teacher training methods.

Funded jointly by the Ministry of Education and USAID, the Ministry began developing a new bilingual education program in 1980 that targeted the four largest Mayan-speaking groups in Guatemala for kindergarten, first, and second grades. The program's objectives were essentially twofold: to develop education materials of greater cultural relevancy and to improve teacher training. The *Programa Nacional de Educación Bilingüe* (PRONEBI) involved much more extensive preparation and teacher training than had been previously attempted (Morren

1988: 357).

As Guatemala's most successful functioning bilingual education program, PRONEBI's most noted feature is its culturally relevant curriculum development. The program does have some limitations, however. The program only addresses the four most widely used indigenous languages, thus leaving approximately 25 percent of the Mayan students who do not speak those languages out of the program's bilingual studies. And, as recently as 1992, the PRONEBI program reached only 15 percent of the Mayan school-age population.

Besides PRONEBI, there is another bilingual education model in Guatemala, "Realistic Adding Bilingual Teaching," which was developed by a bilingual education consultant at the Rural Social-Educational Development Agency, Demetrio Cojti (Asturias de Barrios 1991: 5). Although Cojti acknowledges the importance of Spanish, he advocates a Mayan immersion program (Cojti 1990: 50; Asturias de Barrios 1991: 21).

PRONEBI researchers evaluated students from both experimental and traditional indigenous schools using pre-tests and post-tests. There were no significant differences between the students in the pre-test; however, the post-test showed that, in all grade levels, the experimental school teaching methods and materials were successful. The experimental school students not only surpassed the students from the traditional schools in their mastery of school subjects, but also in their knowledge of Spanish. In addition, student dropout rates declined, and attendance and promotion rates improved (Morren 1988: 365).

Repetition and Dropout Rates

According to PRONEBI enrollment data from 1986 to 1987, the largest drops in enrollment occur between kindergarten and first grade (Guatemala Ministerio de Educación 1991: 4). Overall, 1987-88 had the highest dropout rates out of all the years in the study (see Table 3). The school year 1989-1990 experienced the lowest dropout rates, which, according to PRONEBI researchers, can be attributed to a more stable socio-political environment (Guatemala Ministerio de Educación 1991: 7). The trend appears to be a decline in dropout rates, particularly in 1989.

Table 3
Guatemala: PRONEBI Bilingual Program Dropout Rates from 1986 to 1991 (percent)

Year	K to 1st	1st to 2nd	2nd to 3rd	3rd to 4th	4th to 5th	5th to 6th
1986-87	54.8	29.6	33.3	35.6	34.4	28.7
1987-88	64.9	39.5	38.2	43.0	44.0	38.5
1988-89	68.3	35.4	32.0	38.3	38.7	33.0
1989-90	45.4	13.5	14.4	17.4	19.9	19.7
1990-91	55.1	28.0	27.4	29.1	28.7	18.3

Source: Guatemala Ministerio de Educación 1991.

Dropout rates differ according to the four main ethnic/language regions (K'iche', Q'eqchi', Mam and Kaqchikel). The highest rates are found in the Q'eqchi' region and the

lowest rates in the Mam region (See Table 4) The same is true for repetition rates. The discrepancy between Q'eqchi' school performance and the other regions is partly attributed to the fact that the Q'eqchi' region is extremely rural, and is characterized by small and highly dispersed settlements (Richards 1990: 31).

Table 4
Guatemala: Aggregate Repetition and Dropout from 1986 to 1990

Grade	Overall	K'iche'	Q'eqchi'	Mam	Kaqchikel
Aggregate Dropout Rates					
Pre-primary	13.8	14.3	19.5	9.2	11.6
1	11.6	10.9	15.9	8.2	11.0
2	9.2	7.4	15.5	6.6	8.9
3	9.9	8.9	15.5	7.5	9.2
4	9.2	7.4	15.4	8.3	9.1
5	9.7	8.2	15.5	8.3	9.9
6	6.7	5.5	10.9	6.8	6.4
Aggregate Repetition Rates					
Pre-primary	26.1	23.4	40.1	23.3	22.0
1	32.8	32.0	38.2	30.5	29.8
2	27.5	27.2	30.6	27.4	25.2
3	22.8	21.4	26.6	23.5	21.3
4	16.6	16.1	19.3	17.2	14.8
5	13.4	14.4	15.2	11.5	12.7
6	4.9	4.5	6.5	5.0	4.5

Source: Guatemala Ministerio de Educación 1991.

Using 1986 PRONEBI registration numbers and the University of New Mexico socioeconomic survey data from Guatemala's four main ethnic areas, repetition and dropout rates were examined in relation to bilingualism, village size, and proximity to farms. The survey population had uniform characteristics: bilingual Spanish-Mayan education, more than one teacher per school, and school programs through the fourth grade (Carvajál, Morris and Davenport 1993: 61). Any substantial differences among the ethnic groups would indicate the need for region-specific education programs.

Prior to statistical analysis, PRONEBI data showed that Q'eqchi' had substantially higher dropout (46 percent) and repetition (29 percent) rates than the other three ethnic groups (Kaqchikel, Mam and K'iche'). Covariate analysis of the factors affecting school performance showed that village size was the strongest factor, probably because larger communities qualify for better equipped teaching facilities. The next strongest factor was bilingualism; Q'eqchi' communities were the least bilingual and had the highest dropout/repetition rates (Carvajál, Morris and Davenport 1993: 63). Presumably a strong bilingual community would appreciate the long-term benefits of formal education, in addition to better comprehension of curriculum. Another strong factor in school performance is identified by the researcher as "opportunity cost

proxies," that is the perceived economic value of a certain activity instead of attending school. Thus, children in that community are likely to work on their parent's farm, or work on a cash-paying farm. The only significant "proxy" was the close proximity of cash-paying farms, the high Q'eqchi' dropout/repetition school rates were related to the high number of nearby farms. Conversely, the lowest dropout/repetition rates were in the K'iche' region with the fewest cash-paying farms.

Parents' Attitudes

Parents of children enrolled in the PRONEBI program were found to be overwhelmingly in favor of bilingual education, and 95 percent of those surveyed were in favor of the use of their mother language (Richards 1990: 49). By region, the parents of students in the Kaqchikel and Mam language schools had the most exposure to the PRONEBI didactic materials, and parents in the Q'eqchi' region had the least exposure (Richards 1990: 49). These observations correspond to the regional differences in the Carvajál, Morris and Davenport study, particularly for perceived opportunity costs. Indeed, the covariate analysis of the cash-paying farms strong effect on children's academic performance shows a strong parental proclivity to value farm labor above education, where farming opportunities are available (Carvajál, Morris and Davenport 1993: 64).

The success of PRONEBI can be judged from the indicators derived from the evaluations. Attendance rates, dropout rates and promotions have improved, compared to a control group of Mayan children being taught only in Spanish. The bilingual education project has had a significant impact on promotion rates; more than 9 percent higher for bilingual students relative to the control group in the first grade in 1983 (Townsend and Newman 1985). Program students receive higher scores on all subject matters, including mastery of Spanish (Morren 1988: 365). These results confirm the findings of other researchers (Modiano 1973; Dutcher 1982), who argue that the advantage of bilingual education lies in teaching students in their native tongue along with formally teaching Spanish as a second language. Bilingual education also has the support of the parents of the indigenous children (Richards and Richards 1990). The existence of at least 20 private "Mayan" schools in Guatemala is further evidence of strong family and community support for the recognition of indigenous culture in the classroom (UNICEF 1993).

PERU

The estimated number of indigenous languages in Peru ranges from 35 to 85 (Siguán and Mackey 1987: 59; Hornberger 1992: 191). Approximately one third of all Peruvians speak an indigenous language; Quechua is the most common, followed by Aymara. According to the 1983 Census, there were 32 million (22 percent) Peruvian Quechua speakers (*Instituto Nacional de Estadística* 1983: 197). The census data are inaccurate to the extent that they do not include some of the more isolated indigenous communities.

Most of the Peruvian indigenous communities are extremely impoverished and are located in isolated regions where communications are poor and outside contact with the public administration is rare (Siguán and Mackey 1987: 59). Due to cultural and geographic isolation, monolingualism amongst indigenous communities is prevalent. Currently, Peru has only four

main pilot bilingual education programs in different rural areas.

History of Peru's Bilingual Education Programs

Informal bilingual education was initiated by the Summer Institute of Linguistics (SIL) in 1953 in scattered interior villages amidst debate over which language to use in primary education (Larson and Davis 1981: 7). The SIL's program spread from the interior to rural community schools where educators continued to experiment with bilingual teaching approaches.

The 1972 Peruvian Education Act codified bilingual education. The *Política Nacional de Educación Bilingüe* defined the institution's educational objectives as 1) ethnic consciousness raising, 2) the creation of national pluralistic culture, and 3) the use of Spanish as the common language while maintaining respect for linguistic diversity (Minaya-Rowe 1988: 101). As a consequence of these reforms, four separate experimental bilingual education programs were implemented in the Peruvian regions of Ayacucho, Alto Napo, Ashaninca, and Puno. In addition, a bilingual teacher training program was created for the Peruvian Amazon. All of these programs benefitted from the SIL's earlier research and received technical support from them.

The program in Puno was initiated in 1977 by the Puno Board of Education and the research division of the Peruvian Ministry of Education, with technical advice from the West German Agency for Technical Cooperation (Hornberger 1987: 207). The Puno project, *Proyecto Experimental de Educación Bilingüe-Puno* (PEEB), adheres to the maintenance model described earlier (Milk and López 1986: 453; Hornberger 1989b: 243). After three years of curriculum development, the Project was initiated at the first grade level in 100 schools. By 1987, PEEB dropped down to 40 schools, but taught all six years of primary school (Hornberger 1987: 208). The program is still in operation in this form.

The bicultural/bilingual PEEB program is oriented toward rural, indigenous communities (Hornberger 1989b: 243). Classes are taught in Spanish and Quechua or Aymara, depending on the community's ethnicity. Curriculum material was developed from both Spanish and indigenous cultures (Milk and López 1986: 455). All classes including natural sciences, mathematics, and social sciences are taught in the maternal language. Grammar textbooks describing the indigenous language structure and Spanish books containing indigenous language translations were developed specifically for PEEB (Jung, Urban and Serrano 1989: 24).

The primary difference between PEEB schools and other bilingual programs in Peru is that Quechua or Aymara is used more often (one-third to one-half of instruction time) as the language of instruction, while non-PEEB teachers use the indigenous language as a secondary language for translation (Hornberger 1987: 211).

Results of Peru's Bilingual Education Programs

Researchers have documented the low educational achievement of Peruvian indigenous children (López 1987: 209; Hernandez 1988: 126; Hornberger 1987: 208). National illiteracy rates in 1981 were 18 percent; although, in the Puno region, illiteracy in the same year was 32 percent (UNESCO 1993: 1-26). According to Hornberger's qualitative research, PEEB results

showed that bilingual education was successful. This participant observation data demonstrated that children in the PEEB program had significantly greater understanding of both written and oral tests for Spanish and Quechua, as compared to children in monolingual Spanish education programs (Hornberger 1989c: 40-41). According to Hornberger's research, "there is considerable difference between PEEB classrooms, where the pupils are participating in a meaningful way in speaking, reading, and writing, and the non-PEEB classrooms, where by and large they are not" (Hornberger 1989c: 43). Despite PEEB's positive results, PEEB schools have been segregated from the community, and often are rejected altogether. In the schools Hornberger studied, school activities were kept separate from community activities (Hornberger 1988). For the most part, parents had no prior experience to prove that the program would benefit their children (Hornberger 1987: 218). PEEB schools were most successful in communities that specifically requested the program.

Considered successful by bilingual education experts, the PEEB model has been incorporated into other bilingual education programs (Hornberger 1987:218). Overall, however, bilingual education in the Peruvian school system is still deficient. In 1989, bilingual education reached only 8 percent of the indigenous primary school-age children (Villavicencio 1993: 17). Economic and political considerations have affected the government's ability to support the development of national bilingual education (Hornberger 1993).

BOLIVIA

The last Bolivian census in 1980 showed that 63 percent of the total population speaks one of Bolivia's 38 known indigenous languages, and the majority speak Quechua or Aymara (López and D'Emilio 1992: 41; Hornberger 1992: 191). Quechua speakers comprise 13 percent of the total population and the Aymara comprise 6.7 percent (Hernandez 1988: 124). It is important to note that Quechua is composed of many regional dialect variations, and that not all are mutually intelligible (Briggs 1985: 298). In 1984, Quechua and Aymara alphabets were made official (López and D'Emilio 1992: 42).

The low coverage and quality of education is demonstrated in high illiteracy rates. A World Bank internal study found that about 20 percent of the adult population is illiterate, and at least 55 percent is functionally illiterate. Of the illiterate population, 70 percent is rural, and of that figure, 68 percent is female.

History of Bolivia's Bilingual Program

The first school for indigenous children was started in 1931. The school's objective was to promote an "occupationally manual" lifestyle and the program taught only in the indigenous language (Heyneman 1979: 4). In 1937, the Ministry of Education established the rural education section, which administered a Spanish immersion program from first to fourth grade.

The main experiments in bilingual education through 1983 were the Rural Education Project I, for the Quechua population of Cochabamba, and the Altiplano Complete Education Project, for the Aymara population of La Paz. These early pilot projects followed the transition model, and encouraged hispanic cultural values (Albó and D'Emilio 1990: 325). Other

experiments after 1983, such as the Rural Bilingual Text Project of the Episcopal Commission on Education (CEE), also for the Aymara area of La Paz, proposed maintaining Aymara throughout a child's schooling, however this experiment proved to be deficient in teaching techniques, both in the treatment of the mother language and in that of the second language (Albó and D'Emilio 1990: 325). To combat these problems, the 1984 National Confederation of Bolivian Rural Teachers (CONMERB) and the Bolivian Affiliated Trades Unions (COB) proclaimed the need for inter-cultural and bilingual education.

In 1984 the Government made Quechua and Aymara official languages and began a literacy program using standardized alphabets in both Quechua and Aymara (López and D'Emilio 1992: 42). By 1985, Bolivia's Ministry of Education had begun another experimental bilingual education program that used materials developed from Peru's PEEB program (Choque 1993: 15).

The Cultural Centre for the Teachers of Aroma Province (CCMPA) has been involved in most of the Aymara-speaking communities surrounding La Paz. CCMPA has supported various bilingual education initiatives. For example, one teacher combined grades one and two in Cuchinitos and taught his class bilingually — first-language Aymara literacy in the mornings and second-language Spanish skills in the afternoons. UNICEF provided some of the Aymara readers which he used as a base. Another teacher taught sciences at the intermediate level in the neighboring community of Jankoqi Abajo, and had his students conduct interviews and write about natural Aymara medicines in order to introduce their culture into the curriculum (Leavitt 1991: 7). Using these and other examples, in 1988 the Ministry of Education and Culture, the National Confederation of Bolivian Rural Teachers and UNICEF devised a classroom-based plan to train 30 teachers over a two-year program. The experiment was carried out in approximately 60 schools which were equally divided between Aymara, Quechua and Guaraní.

As recently as 1990, the Governments of Peru, Bolivia and Ecuador met to standardize indigenous language alphabets in the Andean territories. During this meeting the governments signed an agreement between the respective Ministers of Education. The Bolivian agenda was not simply to standardize the alphabet, grammar and dictionary, but also to examine Bolivian legislative policy (Martínez 1990: 378).

Also in 1990, *Proyecto Educación Intercultural Bilingüe* (PEIB) began a nationally-sponsored bilingual education program in Quechua, Aymara and Guaraní. The program instructors use indigenous languages for instruction through the third grade. According to the program director's most recent report, 6,500 students are enrolled in 114 schools with 350 teachers and administrators (Choque 1993: 7). By 1993, the program had reached 12 regions in the Andes and 22 educational centers in the Guaraní area (Choque 1993: 13). Although the program encountered initial apprehension from indigenous parents, the program has since received community support and even requests for program expansion (Choque 1993: 13).

While Bolivia's formal bilingual education system is still under development, many indigenous communities have been exposed to experimental radio bilingual education. Starting in 1958, Maryknoll missionaries established a radio station north of La Paz. Within a limited range, the radio station broadcasted religious programs, and literacy and education courses. Although progress was slow, the program was successful, especially among women, who often

made up 90 percent of the enrollment in the centers (Albó and D'Emilio 1990: 322).

In 1977, the Ministry of Education began a secularized bilingual, bicultural program with the help of the Bolivian Educational Broadcast Network (ERBOL) and its subsidiary organization, *Educación Comunitaria Radial* (ECORA). Not only has this program advanced bilingual education, but it has also allowed indigenous groups an opportunity to listen to their own language and music over the radio, giving them a sense of pride (Albó and D'Emilio 1990: 325). For this reason, Bolivia has been the most important country in Latin America in carrying out bilingual adult education in the mother language (Albó and D'Emilio 1990: 321). As of 1987, 80 percent of the rural population in the Altiplano owned radios (Burke 1987: 70).

Repetition and Progression Rates

Bolivia has high illiteracy and school dropout rates, especially among indigenous people (Patrinos and Psacharopoulos 1992: 4). In fact, data from the 1989 *Encuesta Integrada de Hogares* shows that a primary school student of indigenous origin is almost twice as likely to repeat grades as a non-indigenous child (Patrinos and Psacharopoulos 1992: 9). The Director for PEIB has witnessed greater participation and learning among indigenous children in the bilingual PEIB program than in traditional Bolivian schools (Choque 1993: 9). According to the Director of the National Literacy Campaign, for "every 100 Bolivian rural children enrolled in first grade, only five complete primary school (Chumiray 1993: 43). Chumiray believes that school development is hindered by PEIB's enrollment fees, by low population thresholds among rural communities, and inadequate facilities (Chumiray 1993: 43; Quisbert 1993: 48).

Bolivia has been developing and refining its bilingual education program during the last few years. It currently only reaches a limited number of students, however. High illiteracy and dropout rates point to the need for additional services.

PARAGUAY

There are 21 languages in Paraguay that comprise five linguistic families (Corvalán 1988: 360; Hornberger 1992: 191). Census data from 1981 show that more than 88 percent of Paraguay's total population speaks Guaraní, while less than 10 percent speak neither Spanish or Guaraní. Because of this linguistic distribution, Paraguay is considered a bilingual country (see Table 5).

History of Bilingual Education in Paraguay

In 1944, the High School for Humanities was the first institution to teach Guaraní in its curriculum. Four years later, the school was converted to the National University of Asunción where one professor began a program for training for Guaraní teachers to prepare them for teaching at the primary and secondary school levels (Corvalán 1988: 366). In 1967, Guaraní was made the national language (Corvalán 1988: 367). In 1971, Paraguay's Ministry of Education incorporated two hours per week of Guaraní instruction into the national secondary curriculum. Consequently, the University established a degree program in Guaraní in 1972. Until this time, educators commonly believed the majority of Paraguayans were bilingual, even

Table 5
Paraguay: Distribution of Languages by Urban and Rural Areas (percent)

Area	Guarani Only	Spanish & Guarani	Spanish Only
Rural	60.08	30.91	5.39
Urban	15.00	70.21	12.50
Total	40.10	48.16	6.43

Source: Censo Nacional de Poblacion y Vivienda 1982.

though all schools taught only Spanish to indigenous children (Rubin 1972: 550).

By 1978, the Ministry of Education began a bilingual education program on an experimental level. The 1981 Manual for Bilingual Education explicitly stated the national objective for primary education: "to appreciate the national languages, to express himself confidently in them and to develop the basic skills of listening, speaking, reading and writing in Spanish, and of listening and speaking in Guaraní" (Corvalán 1988: 369). It is important to note that the national program's objective was to teach Guaraní only as an oral language. All subject matter and instructional materials were in Spanish, while Guaraní was used as the language of instruction (Englebrecht and Ortiz 1983: 63). Critics of this program charge that since Guaraní was not taught as a written language, the program simply hispanicized Guaraní children (Englebrecht and Ortiz 1983: 63).

Results of Bilingual Education

Research conducted in 1968 shows the results of Paraguay's Spanish immersion program. Rubin's survey (1972: 555) showed that 77 percent of the monolingual Guaraní children had never passed a single grade and that 92 percent had not progressed further than the first grade. The more remote schools' repetition rates were as high as 61 percent. Average repetition for all six grades in rural schools was 36 percent. In schools close to Asunción, repetition rates were lower: 29 percent for first grade and average repetition for all six grades was 33 percent (Rubin 1972: 557). A later study evaluated the reading skills of monolingual Spanish speaking children, monolingual Guaraní children and bilingual Spanish/Guaraní children. Of those tested, 46 percent of the bilingual students and 55 percent of the Spanish speaking students scored above the total group average (Corvalán 1984: 99).

The different factors influencing bilingual education are just as prevalent in Paraguay as in the other countries studied. However Paraguay's history of bilingualism dominates the culture and continues to serve as a source of national pride. At the time of Rubin's research, many education experts in Paraguay argued that instruction in an international language such as Spanish widens the intellectual scope of the children (Rubin 1972: 558).

The high dropout and repetition rates shown in Rubin's survey clearly suggest that the approach is ineffective. Researchers now agree that Guaraní is the most effective medium of instruction for indigenous children who speak different languages (Rubin 1972: 556; Englebrecht

and Ortiz 1983: 59; Corvalán 1984: 99). The high rate of Guaraní monolingualism in rural areas has strong implications for planning education programs (Englebrecht and Ortiz 1983: 62).

BRAZIL

In 1991, Brazil's population was 151 million (World Bank 1993: 289). There are approximately 208 indigenous languages which are known and about 200,000 individuals who speak them; only 13 percent of these language groups have more than 1,000 speakers and 25 percent have fewer than 100 speakers (Chacoff 1989: 43; Hornberger 1992: 191). According to linguists, a language needs to have at least 5,000 speakers in order to survive (Chacoff 1989: 44). In Brazil, only 8 languages fall into this category: Guaraní, Guajajara, Xavante, Makuxi, Terena, Tukano, Yanomani, and Tikuna (Chacoff 1989: 44).

History of Brazil's Bilingual Education Programs

An indigenous bilingual program was institutionalized by the Presidential Act of 1966. The goal was to ensure bilingual education for indigenous groups and the right to maintain their languages. In 1973, the Brazilian government established a law to safeguard indigenous languages that required school instruction to be done in both the indigenous language and Portuguese (Chacoff 1989: 45). In all public schools, however, students are only taught in Standard Portuguese.

Although there is no formal bilingual education in Brazil, nor any experimental bilingual projects at the national level, there are a few individual projects (Chacoff 1989: 53). For example, in 1971, members of the Institute of Linguistics began the Karajá Bilingual-Bicultural Training Program in the village of Macaúba. In 1972, another organization, FUNAI, adopted the principle of educating minority groups and began pilot bilingual-bicultural programs in four tribes: Kaingáng, Karajá, Guajajara and Xavante.

The Karajá Bilingual-Bicultural Training Program was carried out by the Summer Institute of Linguistics. Using information collected since the late 1950s, an alphabet was developed for the Karajá language. Four primers, three math books, and a health book were created (Alford 1987: 498). The literature was designed to include traditional concepts and stories. The result has been that the Karajá do not experience problems with reading comprehension because they are reading literature that has been written by someone from their own culture, on subjects familiar to both the writer and reader (Alford 1987: 500).

In the Karajá language some words change depending on the gender of the speaker. Approximately 30 percent of the words are modified or different (Alford 1987: 495). This fact, as well as other cultural characteristics such as women's and men's roles, marrying age, and job tasks, have been taken into account in the Karajá Bilingual-Bicultural Training Program. To effectively implement the program, instructors traveled from village to village in the program's initial phases to include the various communities and eventually to establish schools.

The children in the program entered the bilingual school program when they were between six and seven years old. They studied for three years, two and a half hours to four

hours daily depending on their age (Alford 1987: 504). Children had a pre-literacy program where they became accustomed to pencil and paper, different sounds and symbols, numbers and letters through reading and writing. Reading and writing in Portuguese are introduced only after the students have learned to read and write in their mother tongue and have acquired a certain speaking ability in their second language. When the students have learned to read fluently and to write in their mother tongue, they start to read a transition primer which prepares them to read in Portuguese (Alford 1987: 504).

Within this program, the researchers trained three Karajá teachers, one from each of the different clans. The program had two separate teacher training projects; the first one began in 1972 and the second in 1975. Individuals were trained to become teachers in each village. The three-year teacher training program included two to three months of instruction on theory and practical teaching. Then teaching practice occurred back in the individual's village. Theory instruction took place in the morning and practice exercises, which could be modified, took place in the afternoons. The instructors also took part in the design of illustrations for literature used in the classroom.

Since indigenous groups live in the interior and have little access to government-sponsored schools, a formal Brazilian bilingual education program would need to address specific issues. This includes geographic isolation, teachers' attitudes, and oral and written language transcription. Most of the bilingual education programs in Brazil geared towards teaching Portuguese have been unsuccessful since the indigenous monolingual groups find the language and concepts unfamiliar to them (Alford 1987: 494).

CONCLUSIONS

Large populations of monolingual indigenous children in the above six countries indicate the need for an education system that recognizes their needs. One such option is bilingual education. Peru and Bolivia together have a combined indigenous population of approximately 9.6 million, of which the vast majority are Quechua and Aymara speakers. Stronger cooperative efforts between these two countries could only improve upon existing programs. Guatemala's PRONEBI program has already made a significant attempt to promote bilingual education in its ethnic regions.

Although there are significant socio-economic differences between the countries' indigenous populations, several issues are relevant for all six countries.

- Education for indigenous children often ends much earlier than for non-indigenous children, this is clearly demonstrated by high dropout rates, particularly in Spanish/Portuguese immersion programs.
- Early dropout may be prohibitive for bilingual education since most maintenance programs make the transition into Spanish just as the indigenous children dropout.
- Evidence of economic incentives for bilingual education are still weak. Parental attitudes against the programs are common enough to warrant further

investigation, especially since the demand for schooling is shaped partly by expectations of long-term gains in income and enhanced employment opportunities has yet to be addressed. Any program initiated will have to gain greater community support than what is traditionally attempted. The closest satisfactory model for community participation would be the PRONEBI, and then only in selected communities. For the most part, parents do not see the benefits of bilingual education, that of teaching in the mother language for the first three years with Spanish taught as a second language. The data show that the majority of indigenous children dropout in the first three years, consequently the children in a bilingual maintenance program would learn very little Spanish by the time they dropout.

- Funds are lacking to promote education; all of the countries in this study have been economically burdened in the past decade so that many social programs, including education, have been cut.

Several recent studies have shown that the likelihood of poverty decreases as educational attainment increases (Psacharopoulos and Patrinos 1993: 232). However, it is still not clear what kind of education program will work best for indigenous groups, especially since there is no significant research describing the benefits of bilingual education for employment opportunities. Further research is needed in analyzing the costs of bilingual education and dropout and repetition. Increasing numbers of people are migrating away from their indigenous communities and cultures to urban slums in search of hard-to-find employment opportunities. A 1989 United Nations population study reported that 72 percent of Latin Americans are living in cities. Depending upon one's perspective, bilingual-bicultural education can be important for the following reasons, 1) ease the transition for people who are migrating by giving them the necessary skills to work in Spanish-speaking environment and 2) preserve the cultural patrimony of the countries.

Future work must address the following empirical questions:

- More within country analyses of the benefits (achievement, repetition, dropout) of bilingual education.
- Cost-benefit analysis of bilingual programs.
- Labor market and further schooling outcomes of students of bilingual programs.
- Cost-benefit, returns, parental support for bilingual education and other interventions.

The question remains, however, if bilingual education is necessary, should it be a national program or should it be defined locally, that is, geared to community needs, but with national guidelines and support.

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