

Virtual Multilingual Journal

Volume 1, Issue 1- June 2015

Table of Contents

Analysis of Language Maintenance and Language Loss: Focus on Indigenous and International Languages in Mexico from 1990-2010, by Guadalupe Nancy Nava Gómez and José Luis Montesillo Cedillo 2-35

Educando Niños Bilingües-Biculturales-Bialfabetizados: Consejos Prácticos para Padres y Maestros de Educación Preescolar y Primaria del Sur de Texas, by Blanca Vargas, Yimel Vargas, Ana Ramírez, María Agostini and Valentin Ekiaka-Nzai..... 37-59

Exploring the Implementation of Multiculturalism into EC-6 Curriculum, by Mónica R. Medina-Jiménez and Julien Ekiaka-Oblazamengo 61-82

The Effect of Field Experience on the Self-Efficacy of Bilingual Pre-service Science Teachers, by Elsa Cantu-Ruiz & Maria Arreguin-Anderson 84-102

The Evaluation of ESP Course Design and Approaches for Hospitality English, by Bo-An Chen 104-134

Copyright © 2015, Virtual Multilingual Journal

Analysis of Language Maintenance and Language Loss: Focus on Indigenous and International Languages in Mexico from 1990-2010

Guadalupe Nancy Nava Gómez¹ & José Luis Montesillo Cedillo

*Instituto de Estudios sobre la Universidad
Universidad Autónoma del Estado de México*

Abstract

This paper sought to trace the socioeconomic pathways of indigenous and international languages in Mexico. The study comprises data to examine and compare socio-economic factors that govern indigenous languages compared to that of the international ones from 1990 to 2010. The focus of this study consisted of describing and comparing the literacy index of indigenous and non-indigenous groups that prevail in Mexico from 1990 to 2010. Of particular concern is the literacy process and educational policies in Spanish-only oriented to destroy and vanish indigenous languages and hinder the learning of foreign languages. The cost of literacy in Mexico implies the gradual language loss of indigenous languages and helps to explain illiteracy in foreign or international languages.

Keywords: *Language loss, language maintenance, social inequality, linguistically diverse, language policies and educational policies.*

¹ Corresponding author: Instituto de Estudios sobre la Universidad, Universidad Autónoma del Estado de México. E-mail: ngnavag@uaemex.mx

Introduction

This study involved various aspects of theory and practice regarding bilingual populations in Mexico to determine growth analysis, language conflict situations and language planning from an interdisciplinary perspective. The focus was on the analysis of the socio-economic status of native and international languages in order to explain educational problems (educational and social inequality) involved in the status and the loss of indigenous languages, mainly. Mexico is not the exception of issues such as racism; language status and prejudices become entwined in a complex web. The position of the authors in this paper is that in Mexico minority groups of speakers of languages other than Spanish are at a disadvantage economically, educationally, politically and professionally, while the Spanish speakers who speak an international language fluently have academic, cultural, socio-economic gains.

The central question in this study attempted to address two types of bilingualism in Mexico, on one hand, international bilingualism as indicative of linguistic gains and enrichment, translated into higher education, higher earnings, better health, and higher levels of education as well as better employment; on the other, indigenous bilingualism as synonym of illiteracy. People with a different ethnic origin are economically, linguistically and politically underrepresented. It is also observed how a new educational² and current

² Basically, the Educational Reform enacted in 2013 by the Government of Enrique Peña Nieto, states that everyone has the right to education – which should be available free to all at least at the basic educational level (primary and secondary levels). Education is also indispensable in fulfilling other human rights. However, nationwide many indigenous children from 5 years and more miss out on their education because:

- They are made to work at an early age
- they are recruited into drug cartels
- their families do not have the means to pay for schooling

linguistic policy endorses the right of individuals from minority ethnic backgrounds to maintain or lose ethnic identity and language.

The paper stresses the importance of instruction in a child's native or primary language when it is different from the dominant national language or international languages and the vast inequalities in the distribution of learning resources and effective bilingual programs. Finally, the rationale of the paper is that a language is accepted more readily if the target language is given value in academic and professional domains (Baker, 2001, 2005; Barry, 2005; Krashen, 1997, 1999, 2005).

Literature Review

Three major lines of research have permeated the study of language (Baker, 2001, 2006): *language as a problem*, *language as a resource* and *language as a right*. The first category corresponds to *language as a problem* in which language plays a central role in studying the different conflicts that emerged after a language contact situation. In these investigations, language is used as the main weapon to assimilate and mainstream people to a dominant language use (Ryan & Terborg, 2003; Cummins, 2003). Factors such as conquest, religion and schooling are usually associated to this category (Spring, 2007). In these types of studies,

- discrimination and racism undermine their chance to receive an education (lack of instruction and educational materials provided in indigenous languages)
- they face violence in their vulnerable communities as they pursue their education

Another aspect to be considered by this new Education reform is that school fees and related costs are a common barrier to education. These charges - which may be called "voluntary" quotas, matriculation fees or examination costs - are a greater burden for children from poor families, and they disproportionately affect those who are racial and ethnic minorities, members of indigenous communities, mainly.

language is also related to religious intolerance (Fishman, 1991) racial segregation (Spring, 2007), and cultural genocide (Skutnabb-Kangas, 2012/2013).

The second category corresponds to *language as a resource*. Bordieu (2000) suggests that language is considered as an essential part of individuals' *social capital* since it carries people's origin, nationality, schooling and occupation. Factors such as improvement in schooling, work force and better living opportunities are associated to the use of particular languages such as English, Mandarin, Spanish, among others (Chorney, 1995; Fradd & Boswell, 1999; Krashen, 1996, 1997, 2005; Swain & Lapkin, 1982; Willig, 1985). The third category corresponds to *language as a right* (Abdussalam, 1998; Skutnabb-Kangas, 2000, 2012/2013). Skutnabb-Kangas (2000, 2010, 2012/2013) researched in depth on cases in which language is considered as a human right in order to empower specially minority speaking communities throughout the world. By recognizing people's native languages as a human right, their survival is guaranteed. Denying or prohibiting the use of a particular language threatens people's existence and hinders human evolution.

Additionally, it is also important to consider that the research concerning bilingualism could be undertaken from three major perspectives: that of the sociolinguistic, that of cognitive, and that of the educational practice. The first type refers to the study of bilingualism at the social level, phenomena such as: ethnicity, *diglossia*, language contact, language shift or language death, language maintenance, endangered languages, and language genocide, among other issues. The second type considers the study of bilingualism at the individual level, which is usually investigated by speech therapist, psychologist and psychiatrists.

The third type refers to the design and implementation of educational programs following social and linguistic policies (Cummins, 1981, 2001, 2003). Despite the growing interest on bilingualism among educators, linguists and sociolinguists, there is still a paucity of data on how this use of two languages intertwines with society and economic growth in particular with national development effects, and wellbeing of individuals.

A wide variety of studies have analyzed the phenomenon of bilingualism worldwide (Andersson, 2004; Baker, 2000, 2006; Barnes, 2006; Barron-Hauwaert, 2004; Berry, 2005; Bialystock, 2001, 2002; Bialystock & Hakuta, 2006; Cummins, 2001, 2003; Krashen, 1999, 2005). For example, in terms of schooling and cognitive language development, there have been some negative positions against bilingual education. Some evidence against bilingualism was first based on personal intuition. Reynold (1928) pointed out that bilingualism leads to language mixing and language confusion, which in turn results in a decrease in intelligence and a reduction in the ability to think and speak (see Saunders, 1998, for discussion).

The criticism of bilingual education has led to repeated attempts to decrease or abolish it, most notably the 1998 passage of Proposition 227 in California and the 2000 passage of Proposition 203 in Arizona, both of which virtually banned bilingual education in those states. In contrast, the majority of the studies reinforce the positive effects of being bilingual not only in the academic field but also in terms of academic, economic, cultural, social, personal and professional development of individuals who possess two or more languages (Krashen, 1999; and Rosell & Baker, 1996).

Although some of negative positions towards bilingualism exist, there is more research stressing on the importance and relevance of becoming bilingual and multilingual.

In this view, educators as well as other scholars have investigated the impact of bilingualism on the individual's self-concept and cross-ethnic relationships (Cummins, 2003). However, more research is needed in terms of bilinguals' language policies and welfare of bilingual speaking communities. With this in mind, this paper reviewed selected literature pertaining to bilingualism, education and language loss in attempt to answer the research questions further described in this study.

However, in analyzing the micro and macro language policies that take place in education, a number of different hypotheses also need to be examined. The review of the selected literature suggests that in-depth and stronger linguistic analyses should be carried out with regard to the bilingual communities' linguistic choices, and the systematic relationships between language policies mandated by the government, and the type of instruction provided at the schools (Ryan & Terborg, 2003). Research has shown that the public school system serves as a transmitter of both micro and macro linguistic strategies regarding the use or misuse of a particular language (Skutnabb-Kangas, 2000; Ryan & Terborg, 2003). Considering that schools are transmitters of major language policies, Hudson (1980) suggests that language is one of the most important factor by which social inequality is perpetuated from generation to generation. Most importantly, Skutnabb-Kangas (2000) adds that governments through schools are committing linguistic genocide daily. Other studies have shown that differences in language use result in social

stratification, which often leads to social discrimination against members of a particular linguistic community (Chaika, 1992; Skutnabb-Kangas, 2000, Wardhaugh, 1999).

The study of this phenomenon around minority and majority bilingual communities could derive in effective strategies to promote the use of native and international languages in order to implement coherent and inclusive linguistic policies conducive to reinforce the first step toward more linguistic empowered and diverse communities. Recent research, on language choices and education, stresses that indigenous languages should be used in the classroom as a transitional strategy in the acquisition of the standard language (Ryan & Terborg, 2003). In this view, students' mother tongue is a crucial tool to achieve and master proficiency in a second language. Additionally, Krashen (1999, 2005) emphasizes on comprehensible research evidence in immigrant populations that the two most important factors conducive to academic success and economic wellbeing is through content area knowledge acquired in the students' mother tongue along with a vast literacy experience in the students' mother tongue.

Language Loss

Research (Krashen, 1999, 2005; Nettle & Romaine, 2000; Baker, 2006) indicates that language loss can take place due to the lack of mother tongue maintenance in a dominant language oriented type of education. This educational mentality often leads to the child's misuse or disuse of his mother tongue or the next generation changing its linguistic and cultural identity. Skutnabb-Kangas (2000) refers to this as "an instance of linguistic genocide" (p. 353). This author in her seminal work *Linguistic Genocide* provides a comprehensive view of factors preventing the use of minority groups' language by different means such as education.

And, she points out that,

There are many modern sophisticated ways of committing linguistic genocide. My claim is that the use of a minority language is in fact prohibited 'in daily communication or in schools' (UN definition) every time there are minority children in day care centers and schools, but no bilingual teachers who are authorized to use the languages of the minority children as the main media of teaching and child care. (p. 353)

With regard to language loss, Romaine and Nettle (2000) suggest: "the tip of the iceberg is that the world's languages are dying at an alarming rate" (p. 2), and added:

A language is not a self-sustaining entity. It can only exist where there is a community to speak and transmit it. A community of people can exist only where there is a viable environment for them to live in, and a means of making a living. Where communities cannot thrive, their languages are in danger. (p. 5)

While one can survive in Mexico without English or any other international language, for all those who speak an indigenous language cannot survive without Spanish, if they do, that is only possible at the margins of society. Mainstream employment, education and access to basic public services (for instance governmental) are only feasible if one speaks Spanish –or even an international language.

In terms of language maintenance and language loss, for instance, Lambert and Freed (1982) suggested that language shift is a common result of the extensive language contact at a community-wide level. They define this language shift as the gradual displacement of one

language by another in the lives of the community members. Dorian (1994) emphasized: “language shift occurs most typically where there is a sharp difference in prestige and in levels of official support for the two (or more) languages concerned” (p. 44). She suggested, regarding to the relationship between language and power, that when an “empire appears, it is almost certain that the official language of that empire will spread at the expense of the languages of lesser powers which are absorbed by, or even just administered by, the imperial power” (p. 45). However, when one considers the lack of support, the effects of language shift within a particular speech community, and the linguistic inter-phases that lead to language loss, there are some questions that remain to be explained. In addition, it is necessary to study the interphases that lead to language shift and language death in a community, and to interpret the relationships between types of bilingualism, economics and education.

Statement of the Problem

In Mexico, a complex mosaic of languages, variations, and dialects have coexisted in formal, informal, and vulgar configurations. In reality, there is a considerable language mixing in the society, workplace and schools as one might expect in a multilingual country. Accordingly, the INEGI (National Institute of Statistics and Geography), in the 2010 census reported that there were 6 million 695 thousand 228 inhabitants of 5 years and more who speak an indigenous language. Among the most spoken native languages are: Nahuatl, Maya, Mixteco, Zapoteco, Tzotzil, Otomi y Tzeltal languages (INEGI, 2010). The percent distribution of the major indigenous languages in Mexico is illustrated in Figure 1:

- Figure 1. Percent Distribution of the Population in Mexico of Major Native Languages

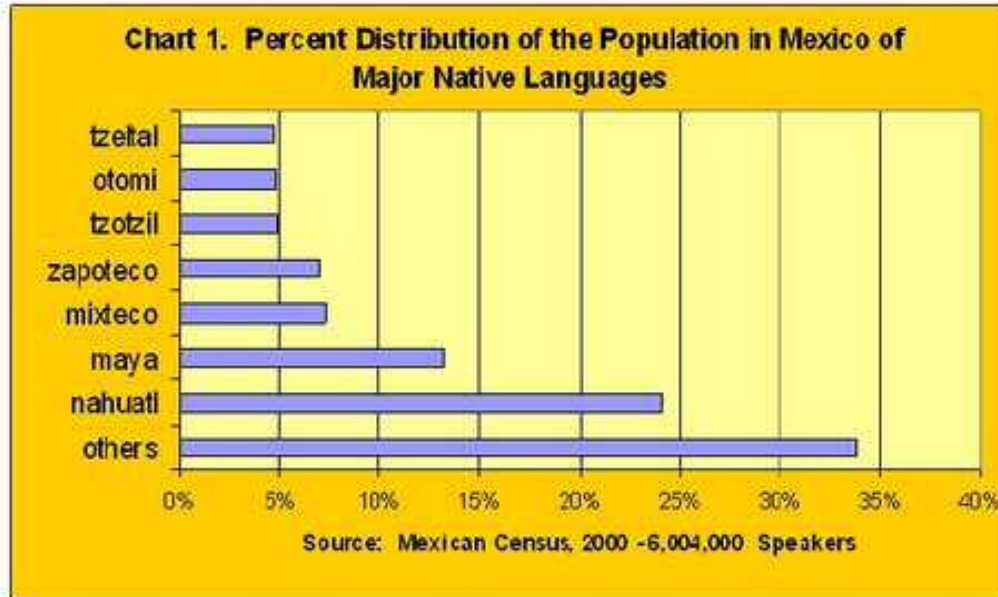


Figure 1. Mexican Census 2000 reported a total of 6,004,000 indigenous bilingual speakers (INEGI, 2000)

INEGI (2010) reported in the last census that at national level, every 6 out of each 100 inhabitants of 5 years and more speak an indigenous language. In total, there are 89 native languages identified in Mexico. The distribution of the most widely and representative of native languages in numbers is illustrated in Figure 2:

▪ Figure 2. Distribution of Native Languages In Mexico



Figure 2. National Committee for the Development of Indigenous Population in Mexico (INEGI, 2010)

In Mexico, questions on ethnic identity and linguistic background are directly associated to the unequal educational and job opportunities. For instance, the majority of governmental efforts implemented since 1990 in order to maintain and protect native language on one side and; on the other, to promote the study of foreign languages as part of the modernization process of the country have not proven to be effective.

In relation to literacy skills, according to the historical trends in adult literacy prospects for 2015, UNESCO (2012) published that 18 countries that reported data on literacy in 1990, adult

literacy rates increased over the following two decades, the increase between 1990 and 2010 ranges from 6% in Mexico and Nigeria to 28% in Egypt.

In contrast, between 2000 and 2010, adult literacy rates increase in only 35 of 38 countries with data for that period, with the rate of growth ranging from less than half percentage point in Cambodia to 21% in Timor-Leste as shown in Table 1.

Table 1.

Adult Literacy Rate (15 Years and Older) (%), Total, 1990-2015

Region	Country	1990	2000	2010	2015 Projection	2015 Target
Latin America and Caribbean	Brazil	...	88.6	90.3	92.4	94.3
	Haiti	...	58.7	48.7	61.0	79.4
	Mexico	87.6	91.0	93.1	93.5	95.5

Note: 1990 data refer to the period 1985-1994, 2000 data refer to the period 1995-2004, 2010 data refer to the period 2005-2010. Information adapted from UNESCO (2012).

Although these figures may represent an increase in achieving a high percent of literacy in Mexico by the year 2015, the hypothesis derived from this analysis is that the cost of this may have a negative impact on the maintenance of indigenous languages in Mexico. The authors in this paper stress that rising the percent of Spanish literate implies to mainstream thousands of indigenous people in order to read and write in the dominant language - Spanish, which in turn,

may represent a dramatic decrease in the percent of indigenous bilingual speakers.

On the other hand, information concerning the situation of international languages levels of proficiency, in Mexico there is a paucity of data pertaining the percentage of speakers of international languages. The low figures pertaining the use of international languages are supported by the English Proficiency Index (EPI, hereafter) (2013), in which Mexico occupied the 40th position out of 60 countries. A year after, in 2014, Mexico occupies the 39th position out of 63 evaluated countries. The EPI identifies five levels of English proficiency: *Very high level*, *high level*, *intermediate level*, *low level* and *very low level*. In this classification, Mexico is identified with a low level of proficiency as shown in Figure 3.

▪ Figure 3. English Level Proficiency In Latin America



Note. Information taken in the English First, English Proficiency Index (2013)

According to the fourth edition of the EF EPI (2013), Mexico registers a negative tendency in the level of English proficiency compared to previous editions (the first two editions of the EF EPI used archival data spanning three years each from 2007 to 2009 and 2009 to 2011, respectively). The results in the fourth edition reinforced once again the low level of English proficiency. To this respect, policy makers, international observers and international organizations have attributed this to the dysfunctional and ineffective educational system. This fact may explain the figures shown in Table 2 pertaining the correlation between the low level of proficiency in Spanish and the negative tendency toward learning English as a foreign language

Table 2.

Countries with a Slight Change Reported by the EF EPI (2013)

Country	Trend
Italy	+1.92
Germany	+1.83
Belgium	+1.51
Finland	+1.38
Costa Rica	+1.08
Argentina	+0.94
Singapore	+0.27
Panama	-0.01
Kuwait	-0.04
South Korea	-0.73
Hong Kong	-0.90
Japan	-0.96
Denmark	-1.43
Mexico	-1.57
Morocco	-1.69
Netherlands	-1.74
Uruguay	-1.93

Note. Adapted from the EF EPI (2013)

The Organization for Economic Co-operation and Development (OECD) identifies low Spanish literacy skills as a major problem in Mexico along with mathematics and science. Overall, the loss of indigenous languages and the low levels of foreign (international) language reported from 1990 to 2010 obey to the lack of effective literacy policies in both indigenous languages as well as international languages.

To summarize, this paper analyzes how educational and governmental decisions of fostering or hindering the use of a particular language recognized and imposed over the rest of the languages that the speakers possess may represent and contribute to a gradual language loss for the future generations and economic detriment. This is done in order to clarify some of the assumptions implicit in language policy choices as they relate to native and FL literacy and bilingual instruction in Mexico.

Method

Data bases such as INEGI and the EF EPI were analyzed using Excel and EViews (Econometrics Views program). EViews was used to perform the comparative analysis as well as the evaluation of the data tendency. A generation of two data sets was prepared. The first data set "Analysis of databases comprises demographic information from INEGI, World English Proficiency Index". Whereas, the second data set "Excel" prepared with variables (literacy and illiterate index, number of bilinguals and monolinguals, growth of bilingual and monolingual population). Using a comparative analysis, we compared the level of literacy in Spanish and the level of English literacy in Mexico.

The evaluation estimated the possible cost of the Spanish literacy in losing indigenous languages and delaying the learning of international languages in Mexico. In the first case, the

more people are educated in Spanish-only the less probabilities will be to maintain the indigenous languages. In the second case, unless there is a balanced increase in the number of literate people in Spanish and indigenous languages, learning a foreign language could take place positively. In this view, it has been observed that most of the data are clustering around illiteracy as a synonym of indigenous bilingual communities as well as illiteracy in a second or foreign language. However, the results suggest that the cost that represents the reduction on the percent of illiteracy in Mexico is associated to the loss of indigenous languages. Surprisingly, the relation between maintaining indigenous languages and increasing the level of literacy in the dominant language as well as international languages is a far-reaching aim among the Mexican population.

Data analysis: Databases

Based on the information provided by the National Commission for the Development of Indigenous Peoples (Spanish: *Comisión Nacional para el Desarrollo de los Pueblos Indígenas*, CDI), revealed that from 1990 to 2010 the total population, indigenous and non- indigenous increased considerably as illustrated in Table 3.

Table 3.

Total Population in Mexico

Year	Total population	Indigenous population	Non indigenous population
1990	81,249,645	8,667,692	72,581,953
2000	97,483,412	10,220,862	87,262,550
2010	112,336,538	11,132,562	101,203,976

Note. National Commission for the Development of Indigenous (NCDI, 2013)

Although there is an increased in the number of both, indigenous population and non-indigenous population in Mexico as illustrated in Table 3, the percent of the indigenous population has decreased considerably from 1990 to 2010 as shown in Table 4 compared to that of the nonindigenous population.

Table 4.

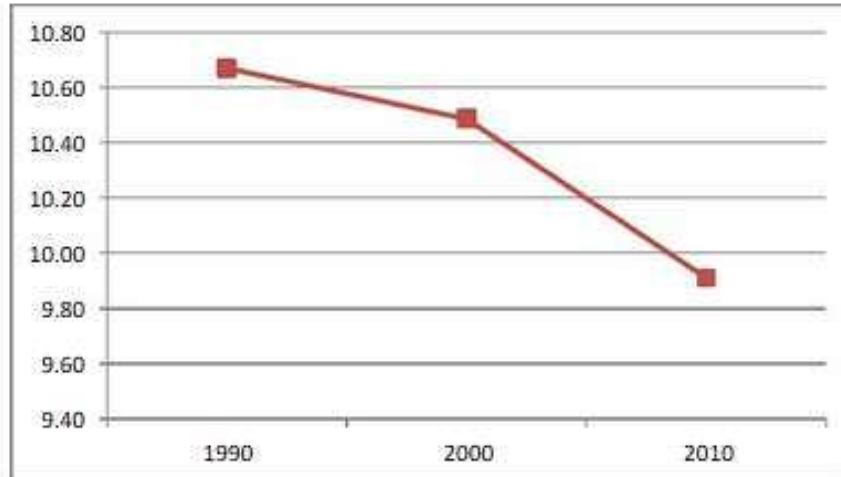
Total Participation of the Indigenous and non-Indigenous Populations in Mexico

Year	Total of the indigenous population	Total of the non-indigenous population
1990	10.67	89.33
2000	10.48	89.52
2010	9.91	90.09

Note. Adapted from INEGI (2010)

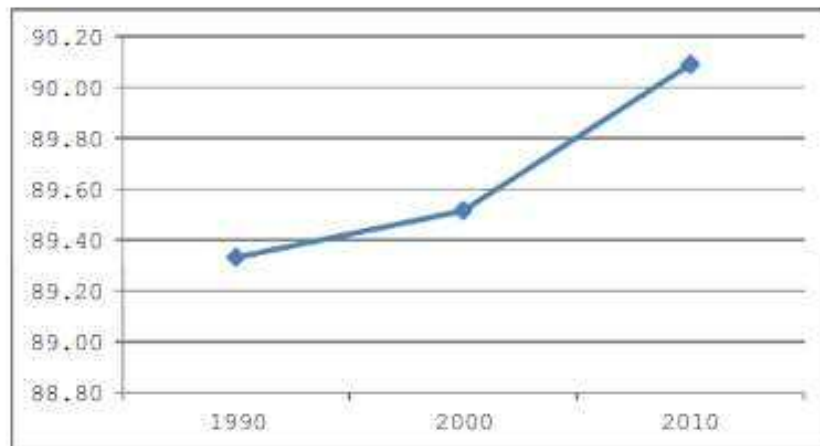
Figure 4. Relative Participation of the Indigenous Population Compared To Total

Population Growth in Mexico from 1990 To 2010



Note. Adapted from INEGI (2010)

Figure 5. Relative Participation of the Non-Indigenous Population Compared To the Total Population in Mexico



Note. Adapted from INEGI (2010)

In Figure 5, the percent of the indigenous population among the percent of the total population in Mexico decreased to a 0.19% from 1990 to 2000; however, from 2000 to 2010 another decreased was observed to 0.57%. This implies the speed of the decline among the indigenous population, which doubled from 2000 to 2010. If this negative tendency in the number of indigenous speakers continues, it is projected that by the year 2020, the participation of the indigenous speakers among the total population will have declined to 1.71%, and by the year 2030, the total numbers of indigenous population would have drop to 5.13%.

The growth rate of the total population in Mexico from 1990 to the year 2010 reveals a negative tendency for both indigenous and non-indigenous population as shown in Table 3. However, it is important to note that the speed in which the indigenous population diminishes is the double compared to that of the non-indigenous population.

Table 5.

Rate of Change of the Population in Mexico, from 1990 To 2010

Year	Total population	Indigenous population	Non-indigenous population
1990	-	-	-
2000	19.98	17.92	20.23
2010	15.24	8.92	15.98

Note: Adapted from INEGI (2010)

A suitable explanation of the noticeable growth (double) observed (Table 5) in the rate of change of the indigenous population compared to the non-indigenous population may represent the path towards the extinction and vanishing of the non-indigenous population at an alarming rate as well as their languages. Another explanation derived from the speed to which the non-indigenous population decreases may obey to the better living conditions and welfare of the non-indigenous population compared to the scarce opportunities of the bilingual communities to satisfy basic needs in food, clothing, shelter, and health. In other words, being bilingual in Mexico is associated to poverty and social inequality. Although this is a crucial point to be analyzed and evaluated, the authors in this paper will focus on other demographic data.

Socio-demographic data on indigenous population in Mexico: Literacy

Accordingly, Table 6 shows the literate population of Mexico of 15 years and more including the indigenous and the non-indigenous population. The growth of both populations every ten years is noteworthy.

Table 6.

Total Literate Mexican Population, Indigenous and Non-indigenous of 15 Years and More

Year	Total literate population of 15 years and more	Literate indigenous population of 15 years and more	Literate non indigenous population of 15 years and more
1990	43,354,067	3,224,273	40,129,794
2000	56,841,673	4,518,707	52,322,966
2010	72,425,081	5,737,945	66,687,136

Note. Adapted from INEGI (2010)

Accordingly, there is an increase in the literacy level observed from 1990 to 2010 in both groups, indigenous and non-indigenous populations; however, the average rate of change of the Indigenous population from 1990 to 2010 ranked 28% with a positive tendency; while the non-indigenous population ranked only 16.1%. The differences in the growth of the population show that the illiterate indigenous population is higher compared to that of the non-indigenous group. Moreover, the data also suggests that a significant percent of the illiterate Mexican population belongs to the indigenous portion of the total population in Mexico as illustrated in Table 7.

Table 7.

Percent of the Literate Mexican Population of 15 Years and More

Year	Literate total population of 15 years and more (%)	Literate indigenous population of 15 years and more (%)	Literate non-indigenous population of 15 years and more (%)
1990	53.36	37.20	55.29
2000	58.31	44.21	59.96
2010	64.47	51.54	65.89

Note. Adapted from INEGI (2010)

Table 7 shows the illiterate total population of 15 years and more; including the indigenous and non-indigenous population. There is a negative tendency observed in the non-indigenous population of 15 years and more from 1990 to 2010. In contrast, the speed to which the rate of change of the illiterate indigenous population diminishes is lower than that of the non-indigenous

population. It is important to highlight that the proportion of the illiterate indigenous population of 15 years and more is 2.78 times higher than that of the non-indigenous population as illustrated in Table 8.

Table 8.

Total Illiterate Population of 15 Years and More; Indigenous and Non-Indigenous

Year	Total illiterate population of 15 years and more	Illiterate indigenous population of 15 years and more	Illiterate non indigenous population of 15 years and more
1990	6,161,662	1,683,700	4,477,962
2000	5,942,091	1,696,631	4,245,460
2010	5,393,665	1,582,420	3,811,245

Note. Adapted from INEGI (2010)

In 2010, the illiterate indigenous population of 15 years and more represents the 14.2% of the total population in that group. While the illiterate non-indigenous population of 15 years and more represents the 3.8 % of the total population in that group. This data suggests once again that the percent of illiteracy is mainly concentrated on the adult population in both groups. Additionally, the higher percent of the total illiterate Mexican population is concentrated on the indigenous adult population as shown in Table 9.

Table 9.

Percent of the Illiterate Population of 15 Years and More Compared Within the Same Group

Year	Total illiterate population of 15 years and more (%)	Illiterate indigenous population of 15 years and more (%)	Illiterate non-indigenous population of 15 years and more (%)
1990	7.584	19.4	6.2
2000	6.095	16.6	4.9
2010	4.801	14.2	3.8

Note. Adapted from INEGI (2010)

From all the data gathered, new research questions emerge: To what extent does the literacy process benefit the indigenous population in Mexico? Is language maintenance in jeopardy for the indigenous population while there is a strong tendency to assimilate and mainstream them in Spanish as the dominant language? Overall, does literacy in Mexico represent an effective strategy to maintain or vanish indigenous languages? To find and prove the answers to these questions is not an easy task because it has several implications that fluctuate from the designing and implementation of linguistic public policies to maintain and preserve the local languages (and all that it implies such as culture, clothing, health, food, religion among others) moving through the humanitarian conditions involved to the moral implications of it.

Although the data presented is oriented to situate the analysis of language maintenance and language loss with special emphasis on indigenous languages in Mexico, from 1990-2010, the estimate for international languages seems to be an unresolved linguistic issue. This problem

seems to be associated to a political issue associated to whether the government implements strong and effective literacy programs to reduce the percent of illiterate Mexican population at the expense of misplacing indigenous languages or how to foster the teaching of a foreign language program when there are over five million Mexicans who are not able to read and write in their mother tongues.

This entails to prepare the data for further analysis in order to draw some insightful conclusions. For instance, in Mexico there is insufficient and limited data pertaining the use of foreign languages, it is not fully documented. As authors, we attribute it to the current Spanish-only language policy as the official language allowed, spoken and widely used in formal and informal settings.

Conclusions

This paper examines specific situations where relations of language dominance, and level of illiteracy as well as political underrepresentation and inequality are evident in the distribution, maintenance and loss of indigenous and international languages in Mexico. Furthermore, while there are some studies and reports indicating that indigenous languages are endangered and threatened, effective educational and linguistic policies should be implemented to restructure the national curriculum in which native or indigenous languages are used for instruction. Through the analysis of the growth of indigenous population in Mexico since 1990 to 2010, it was noted that there have been two conditions toward indigenous bilingual communities:

- 1) There is a negative tendency of the percentage of literate people nationwide.
- 2) A higher percent of illiterate population is concentrated on the indigenous portion of the total population, particularly in the indigenous group of 15 years and more.

According to the data presented, the researchers observed an increase on the indigenous population. Nonetheless, the percent of illiteracy increases as well, further analysis should focus on a possible correlation between the level of illiteracy and the percent of indigenous population per group age. If languages are not passed on to the younger generation they will eventually die out; however, this does not represent the only condition toward the language diversity maintenance in the country. The recommended output of this study stresses to:

- A) Provide formal education in the children's mother tongue in all indigenous communities.
- B) Leave behind assimilationist educational practices oriented to mainstream bilingual communities to Spanish-only use.
- C) Reorient the curriculum toward more inclusive and diverse language practices and policies.
- D) Guarantee multilingual settings when necessary according to the characteristics and needs of the linguistic communities.
- E) Develop and implement heritage or maintenance type of bilingual education programs when needed.
- F) Foster the use of foreign languages based on the development of academic language and content-based learning, mainly.
- G) Recognize, allow and support the development of autonomous indigenous educational systems by the State.

Mexico's average level of English is low, most students who already have strong English come from Mexico's expensive private schools, but a vast majority of students attend public schools. These public school students cannot compete with their privately educated peers. There are observable non-equal educational opportunities among all the Mexican population.

In this study, we present research evidence which supports the hypothesis that the more the population is becoming literate in Spanish as the dominant language, as well as international languages, the less the number of indigenous language speakers as a result of the government campaigns fostering literacy in Spanish and foreign languages.

Additionally, we also have documented some of the initiatives of the Mexican government since 1990 in order to change the linguistic realities of the country. It is clear that a language shift has taken place within a very short period of time. However, as Spanish continues to be fostered and promoted in schools, the numbers of illiterate people and indigenous bilinguals are increasing dramatically at the time the number of speakers of international languages is decreasing. These results lead to a positive correlation between the level of illiteracy and indigenous bilingualism. In this particular case, the number of speakers who are considered bilingual in Mexico may be also counted as the illiterate portion of the total of the population. In this context, the higher the percentage of indigenous bilingualism, the higher the percentage of illiteracy in the country as shown by the figures presented. Consequently, to reduce the number of illiterate people in the country implies a detriment in maintaining or promoting heritage languages that are spread throughout the country.

Another significant conclusion derived from the study is the cost of Spanish literacy in Mexico, which involves the vanishing of an important number of indigenous linguistic communities. Although there is plenty of research evidence, which advocates for the implementation of effective bilingual programs throughout the world, in Mexico, educational programs oriented to assimilationist goals prevail for bilingual and minority ethnic groups. Referring to Cummins (1981) classification of types of bilingual programs, the type of education provided to bilingual communities is either segregationist -Sonora (Yaquis & Mayos) or separatist -Chihuahua, Chiapas, Campeche, Yucatan, Oaxaca, Guerrero (*Tarahumara, Chontal, Maya, Zapoteco, Mixteco*). In the first case, the typical type of child is language minority; the language of the classroom is minority language (forced no choice); the societal and education aim is apartheid; while the aim of the language outcome is *monolingualism*. In the second case, the typical type of child is language minority; the language of the classroom is minority language (out of choice) and the societal and educational aim is detachment and autonomy, and the aim in language outcome is limited bilingualism (Baker, 2006).

The results obtained in this paper explain some of the problems associated to the lack of equity and access to educational opportunities. It also provides shed light on the nature of the increasing numbers of illiterate people due to the lack or scarce formal educational structures that exist to maintain and foster the learning of indigenous languages. In this view, the decreasing tendency of English language proficiency levels noted by the English Proficiency Index in 2013 obeys, in part, to the increasing number of illiterate people in the country.

In terms of language maintenance and language loss, the presence of indigenous bilingualism needs to be seriously into consideration for a re-engineering of educational and linguistic policies that not only promote the maintenance of indigenous languages but also the effective bilingual programs that guarantee bilingualism and *biliteracy* in both indigenous and international languages.

To sum it up, assimilation and Spanish mainstreaming of bilingual communities (indigenous) is dominant over educational effectiveness. In this view, the results of the negative tendency point out that regardless the educational and linguistic policy implemented for indigenous and international languages in Mexico, the aftermath is the same, limited bilingualism in the best-case scenario; and illiteracy and double *semilingualism*, in the worst.

Nonetheless, we recognize that the type of “language planning” needed for implementing effective and social reforms that foster the learning of not only indigenous languages but also international languages, requires a discourse created in the society, normally by the dominant groups, which are enshrouded in the overall endeavors of “social engineering” of the ruling political party. A suggested further studies needs to investigate more on the linguistic cost of Spanish and foreign languages literacy practices in Mexico.

REFERENCES

- Abdussalam, A. S. (1998). Human language rights: An Islamic perspective. In G. Benson, & Skutnabb-Kangas (Eds.), *Language Rights: Special Vol. 20. Language Sciences* (pp. 55-62).
- Andersson, S. (2004). *Growing up with two languages: A practical guide*. London, UK: Routledge.
- Baker, C. (2000). *A parents' and teachers' guide to bilingualism*. Clevedon, England: Multilingual Matters.
- _____ (2001). *A parents' and teachers' Guide to bilingualism*. Clevedon, UK: Multilingual Matters.
- _____ (2005). *The care and education of young bilinguals: An introduction to professionals*. Clevedon, UK: Multilingual Matters.
- _____ (2006). *Foundations of bilingual education and bilingualism*. Clevedon: Multilingual Matters.
- Barnes, J. D. (2006). *Early trilingualism: A focus on questions*. Clevedon, UK: Multilingual Matters.
- Barron-Hauwaert, S. (2004). *Language strategies for bilingual families: The one-parent one language approach*. Clevedon, UK: Multilingual Matters.
- Berry, J. W. (2005). Acculturation: Living successfully in two cultures. *International Journal of Intercultural Relations*, 29, 697-712.
- Bialystok, E. (2001). *Bilingualism in development: Language, literary, and cognition*. Cambridge, UK: Cambridge University Press.

- _____ (2002). *Language processing in bilingual children*. Cambridge, UK: Cambridge University Press.
- Bialystok, E., & Hakuta, K. (2006). *In other words: The science and psychology of second-language acquisition*. New York: Basic Books.
- Bourdieu, P. (2000). Las formas del capital. Capital económico, capital cultural y capital social. In P. Bourdieu (Ed.), *Poder, derecho y clases sociales* (pp. 131- 164). Bilbao: Desclée de Brouwer.
- Chaika, E. (1992). *Language the social mirror*. Massachusetts: Newbury House Publisher.
- Chorney, H. (1995). The economic benefits of linguistic duality and bilingualism: A political economic approach. In *Official languages and the economy*. Papers presented at a Colloquium Hosted by the Official Languages Support Programs Branch on May 5, 1995, Department of Canadian Heritage: Ottawa, Public Works and Government Services Canada.
- Cummins, J. (1981). *Bilingualism and minority language children*. Toronto: Ontario: Institute for Studies in Education, 1981.
- _____ (2001). *Negotiating identities: Education for empowerment in a diverse society*. Covina, CA: California Association for Bilingual Education.
- _____ (2003). *Language, power and pedagogy: Bilingual children in the crossfire*. Clevedon, UK: Multilingual Matters.
- Dorian, N. (1994). Purism vs. compromise in language revitalization and language revival. *Language in Society*, 23(4), 479-494.
- English Proficiency Index. (2013). Retrieved from <http://ef.com/epi/>

English Proficiency Index. (2014). Retrieved from <http://ef.com/epi/>

Fishman, J. (1991). *Reversing language shift*. Clevedon, UK: Multilingual Matters.

Fradd, S. H., & Boswell, T. D. (1999). Income patterns of bilingual and English-only Hispanics in selected metropolitan areas. In S. H. Fradd (Ed.), *Creating Florida's multilingual global workforce: Educational policies and practices for students learning new languages*. Tallahassee: Florida Department of Education.

Grosjean, F. (1982). *Life with two languages: An introduction to bilingualism*. London: Harvard University Press.

Hudson, R. A. (1980). *Sociolinguistics*. Cambridge: Cambridge University Press

Instituto Nacional de Estadística y Geografía (INEGI). (2010). Distribución porcentual de analfabetismo de la población de 15 y más años. Retrieved from <http://cuentame.inegi.org.mx/población/analfabeta.aspx?tema=P>

Krashen, S. (1996). *Under attack: The case against bilingual education*. Culver City, CA: Language Education Associates.

_____ (1997). The comprehension hypothesis: Recent evidence. *Teachers' Journal (Israel)*, 51, 17-29.

_____ (1999). *Condemned without a trial: Bogus arguments against bilingual education*. Portsmouth: Heinemann.

_____ (2005). The acquisition of English by children in two-way programs: What does the research say? *NABE Review of Research and Practice*, 3, 1-20.

Lambert, R. D., & Freed, B. F. (Eds.). (1982). *The loss of language skills*. Rowley, MA: Newbury House.

- Nettle, D., & Romaine, S. (2000). *Vanishing voices: The extinction of the world's languages*. Oxford: Oxford University Press.
- Rossell C. H., & Baker, K. (1996). The educational effectiveness of bilingual education. *Research in the Teaching of English*, 30, 14-21.
- Ryan, M. P., & Terborg, R. (Eds.). (2003). *Language, issues of inequality*. México: UNAM.
- Spring, J. (2007). *Deculturalization and the struggle for equality: A brief history of the education of dominated cultures in the United States*. (5th Ed.). New York: McGraw-Hill.
- Skuttnabb-Kangas, T. (2000). *Linguistic genocide in education or worldwide diversity and human rights?* New Jersey: Lawrence Erlbaum Associates.
- Skuttnabb-Kangas, T. (2012/2013). Linguistic Human Rights. In A. C. Chapel (Ed.), *The Encyclopedia of Applied Linguistics* (pp. 282-284)
doi:10.1002/9781405198431.wbea0717.
- Skuttnabb-Kangas, T., & Dunbar, R. (2010). Indigenous children's education as linguistic genocide and a crime against humanity? A global view. *Journal of Indigenous people [Special Issue]*, 1.
- Skuttnabb-Kangas, T., & Phillipson, R. (2008). A Human Rights Perspective on Language Ecology. In A. Creese, P. Martin, & N. H. Hornberger (Eds.), *Ecology of Language* (pp. 3-14). New York: Springer.
- Saunders, G. (1988). *Bilingualism children: From birth to teens*. Clevedon: Multilingual Matters LTD.

Swain, M., & Lapkin, S. (1982). *Evaluating bilingual education: A Canadian case study*.

Clevedon, UK: Multilingual Matters.

United Nations Educational Scientific and Cultural Organization (UNESCO). (2012). Institute

for Statistics (2012). Retrieved from

<http://www.uis.unesco.org/Education/Documents/UIS-literacy-statistics-1990-2015en.pdf>

Wardhaugh, R. (1999). *Introduction to Sociolinguistics*. Oxford: Blackwell.

Willig, A. (1985). A meta-analysis of some selected studies on the effectiveness of bilingual

education. *Review of Educational Research*, 55(3), 269-318.