

The development and use of first and second languages in bilingual education: an introduction for educational planners in multicultural and multilingual contexts

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1. Introduction

Vygostky 1962 concluded that there were close interrelationships between language and learning and also that the level of 'maturity' the pupils develop in their first language becomes a prerequisite for learning an additional language. On this basis, I would like to draw your attention precisely to the role the mother tongue or first language plays in the education of language-minority children and on the interrelationship between first language development and the acquisition of a second language. In so doing we will not only refer to theories that support this interrelationship, such as those of Vygotsky's, but we will also review research results, offering empirical evidence which supports such theories.

As Dutcher (1995) has pointed out here are now hundreds of research reports on the acquisition of first and second languages as well as an increasing number of studies on bilingual education. However, there are still myths and misconceptions that influence decision-makers regarding the education of bilingual or polyglot learners. This occurs in a framework in which generally the language chosen as the official language of education in a multilingual and multicultural context is different from the language or languages spoken by the students.

Before reviewing studies offering evidence sustaining the application of bilingual education programs, as a manner of introduction we consider it necessary to present a summary of some of the most important myths and misconceptions that still influence decisions generally taken in education regarding the students' bilingualism or polyglotism. The summary that follows is heavily based on sections of Dutcher's 1995 review of the literature on the use of first as second languages in education as well as on the first section of Lopez [1995] 1998. Both communications, in turn, are largely based on the work of Bialystok and Hakuta 1994, McLaughlin 1984 and 1992,

Cummins 1981, 1984, 1992 and 1994, Collier 1992, Hakuta 1986, and Wong Fillmore 1992.¹

1.1 Myth 1: Children know their first language by the age of six when they come to school.

There is sufficient empirical evidence to sustain that children need to develop their first language at school through systematic instruction. Although some people would find such an observation redundant, in many indigenous communities in developing countries it is fairly common for parents to object to the inclusion of the children's first language in the school curriculum. Their argument is straightforward: "children know and speak the home language when they start their formal schooling, therefore there is no need for the school to teach them a language they already know and speak fluently". This argument becomes one of the various obstacles the implementation of bilingual education programs meets in indigenous rural areas of Latin America (cf. Lopez 1995).

No native Spanish speaking parent, however, would ever object to the inclusion of a subject area devoted to the development of his children's first language. What generally occurs in subaltern settings is that indigenous parents perceive school as an institution, which being alien, opens up a path for early acquisition of the region's dominant language and culture. This very fact often determines indigenous parents' objection to instruction in the first language, since they probably consider it a waste of time or either something the family or the indigenous community itself could be responsible for. Hence, they leave to formal education the responsibility of teaching those contents or of developing those competencies the indigenous family or the community can not do by itself.

The fact is that research indicates that one needs at least 12 years to develop one's own language (McLaughlin 1984, 1992). Such finding coincides with one of the last stages of Piaget's cognitive development in which children acquire higher levels of linguistic abstraction. As of age 12, or more clearly during adolescence, children would develop that kind of 'rational or 'propositional' language that Crystal 1994 refers to, and which is the object of systematic instruction in school. Dutcher would support this argument when she states that "from ages 6 through 12, children accelerate their

¹ Dutcher 1995 and Lopez 1995 coincide in the information provided, although with slight variations and emphasis as to what Dutcher identifies as myths 1, 3, 4 and 6. Myths 2 and 5 are presented by Dutcher. Here we have combined myths 2 and 3 into one, due to the similarity of the issues revised. The titles of the myths used here are those of Dutcher's.

learning of vocabulary, tripling their word learning rate so that by age 20, they will know about 70.000 words... They learn about complex topics, how to express relations between ideas, and how to use language in a metaphorical way. Much of their development is assisted by the acquisition of the complex skills of reading and writing, and their acquisition of information from language arts, mathematics, science, and social studies. Much of the school language is abstract or decontextualized, without the concrete references which supported the language development in the earlier years” (1995:2).

Being first language development closely related to the students’ cognitive development, it is necessary to consider the inclusion in the school curriculum in multilingual contexts of a specific subject area in which the students consolidate their previous linguistic knowledge acquired through their first language, improve their linguistic competencies by means of the acquisition of written language and, in general, develop oral and written mastery in their first language. It comes as no surprise then that anywhere in the world children of hegemonic groups devote an important part of their school life time to the language arts and to the development of their ‘own’ language, both orally and in writing, although with a higher emphasis on reading, writing and text production. Why should not this also be the case in multilingual contexts and with subaltern societies and children? Is it no the case that they also need to develop their first language thoroughly before or concurrently with learning other languages as it occurs with children of hegemonic societies? Why is it that the bilingualism of the elite is praised and stimulated but the bilingualism of subaltern societies or minority groups questioned and regarded as an obstacle for learning?

1.2 Myth 2: Children learn second languages more quickly and easily than adults.

It is commonly believed that children acquire a new language easily and more quickly than adults do. “This belief is based on observation of children’s apparent ease socializing with peers with whom they lack a common language. It is also based on... an argument that children are superior to adults in learning second languages because their brains are more flexible than those of adults” (Dutcher 1995:2).

Research shows us, however, that this assumption does not necessarily hold true for all linguistic areas other than phonology. On the one hand, the importance we generally assign to a “good pronunciation” is probably responsible for this misleading conclusion or myth. On the other hand, we fail to pay attention to the importance social processes

and socializing itself play when children learn new languages. Apparently, it is these social conditions of learning that turn out to be more influential than the biological factors commented above.

McLaughlin 1992, for example, refers to a study conducted in England where 11-year-old pupils received systematic instruction in French as a foreign language for five consecutive years. At the end of said period these learners had achieved a better command of French than other students who had begun their studies of this language at the age of 8. Likewise, in a study conducted in the Netherlands with North American children studying Dutch for two or three years, longitudinal testing every four to five months showed that the students from 12 to 15 years of age obtained better results than their younger counterparts, except for the sections that evaluated phonological performance, aspect in which no significant difference was found (Snow and Hoefnager-Hohle 1976, cited in Hakuta 1986).

The advantages that older children and adolescents have over younger children are found in the more complex areas of morphology and syntax. The age factor may influence these results since the proficient use of these aspects calls for equally higher and complex cognitive operations. The higher level of maturity possessed by older children and adolescents in their first language allows them to transfer experience and knowledge developed in their first language to the process of learning their second language.

In summary, there seems to be no doubt that the age factor must be taken into account and that age can be used as a predictor for proficiency in a specific area of language like phonology. It indeed seems certain that the younger the learner the closer his pronunciation will be to that of a native speaker of the language he is learning.

But the age factor does not seem to be as determining as we previously considered it. The biological explanations we used to resort to do not seem to be as strong as we previously considered them since they appear to be related only to one area of language development and not to every one of them. Furthermore, it remains to be established whether social and psychological factors –such as attitude, motivation and level on inhibition- are not stronger than biological ones in the more fluid performance generally observed in children when they speak a second or foreign language (cf. Hakuta 1986; Bialystok and Hakuta 1994).

1.3 Myth 3: The more time students spend in a second language context, the quicker they learn the language.

It is also very often considered that the higher the level of exposure to the second language the more opportunities the learners will have to acquire it and the quicker they will do it. This assumption does not seem to correspond to what really occurs with bilingual subjects, since more importance should be given to the development of that maturity in the child's first language that Vygostky (1962) referred to. Research has shown us that the longer time investment in first language development turns out to be beneficial for second language learning (cf. Cummins 1994). A study conducted in three different types of bilingual education programs for Latino children in the United States, for example, concluded that:

Students who were provided with a substantial and consistent primary language development program learned mathematics, English language, and English reading skills as fast or faster than the norming population used in the study. As their growth in these academic skills is atypical of disadvantaged youth, it provides support for the efficacy of primary language development in facilitating the acquisition of English language skills (Ramirez et al 1991:36, cited in Cummins 1994).

Contrary to generally common beliefs, exposure to the second language at the expense of the first one seems to be counterproductive. There are sufficient examples of school failure resulting from this practice. Submersion oriented instruction in rural indigenous societies, although providing ample exposure to a second language has in a great number of cases resulted either in early drop out or grade repetition and in the early frustration of children from subaltern groups with the consequent undermining of their self-esteem.

The fact that the amount of time spent in the development of the first language is more important than the time spent in the second one is certainly counter-intuitive. As we will see, many studies, which compare the achievement of bilingually educated children with that of their counterparts in submersion schemes, show results favoring the first ones. Such apparent discrepancy is explained through the "interdependence hypothesis" which postulates the existence of a common underlying language proficiency for the two languages spoken a bilingual individual. This common underlying linguistic knowledge makes it possible to transfer competencies developed in one language to the another language (Cummins, 1981, 1994).

1.4 Myth 4: Children have learned a second language once they can speak it.

This myth is closely related to the first one identified in this section since one can find pupils who although able to communicate socially in a new language, cannot follow and duly understand lessons developed in that same language in the classroom. The fact is that, when judging language proficiency, one very often fails to distinguish between the use of language in social settings from the use of language in academic settings.

This is indeed one of the main problems encountered in second language teaching at school, particularly when the language is taught so that it could later be used as a medium of instruction. Most generally language programs pay attention to the development of social linguistic skills and neglect the development of academic skills. Research has shown that such a difference is vital since it determines the success of a student who studies in a language other than his own, when he has not been specially prepared to use that language for academic purposes. The use of a new language in social settings is supported by different contextual and interpersonal clues which help the participant discover the meanings being negotiated, whilst in an academic setting language use is highly decontextualized and dependant mainly on linguistic clues.

Under the title of “the conversational / academic language proficiency principle” and in order to explain some of the differences found in school performance of minority students in relation to their proficiency in English, Cummins established the difference between basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP) based on a framework which also distinguished “between the cognitive and contextual demands made by particular forms of communication” (Cummins 1994:10). He emphasizes us that children learning a second language generally develop their conversational competencies or BICS rather quickly (in a matter of one or two years, providing there is adequate exposure to the second language). But, they take longer to develop the academic functions of language –or CALP- since these also call for higher levels of cognitive development. On the basis of bilingual education program follow-up and evaluation different researchers have established that a minimum five to seven years of systematic academic instruction in a second language is required to achieve CALP. BICS, however, could be attained in much shorter period of two years.

On the basis of his findings an those of others and regarding the length of time to be devoted to first language development and the application of bilingual education programs, Cummins (1994:14) concludes that:

The... discussion of the nature of language proficiency and the length of time required to develop peer-appropriate levels of conversational and academic skills have immediate relevance for two practical issues. First, support for language and academic development is still beneficial (and frequently necessary) even after students have attained conversational fluency ... [in a second language]. Exiting children prematurely from bilingual... programs may jeopardize their academic development, particularly if the mainstream classroom does not provide an environment that is supportive of language and content development.

Considerations such as these deserve even more attention in predominantly oral societies such as those of indigenous Australia or of many rural areas of South and Central America, for example, where indigenous children have no real need in life to read and write (cf. EDSA in Lopez 2000). In many situations the use of the written language belongs only to school life and it is only there that indigenous children need to read and write. In fact it is through the school that children begin to move from a predominantly oral setting to one where the use of a written mode of communication is mandatory and to an institution like school where language is very often used in a decontextualized manner. In settings such as these it is far more important to keep in mind the useful pedagogical distinction established by Cummins (op. cit.) since students from a non-literate tradition would most often expect language to be used in a contextualized manner (Ibid.).

1.5 Myth 5: All children learn a second language in the same way.

Although current pedagogical discourse recognizes the importance of individual differences in learning, very seldom is pedagogical analysis and reflection directed to the cultural differences that may influence learning in general as well as the acquisition of second or foreign languages in formal settings in a Western-style school. Cross-cultural studies in cognition have warned us of the existence of different ways of thinking and learning (cf. Cole and others 1971, Lopez 2000) which are generally ignored by Western-style education. Surely, cultural differences such as those must also determine the way in which one learns a new language, particularly when one's process of socialization is not as verbally marked or influenced as the one characteristic of Western-style middle class families. In rural and indigenous communities, for instance, the role of silence may be fundamental in second language learning since the traditional mode of learning is one where careful observation and adult and peer imitation play an important role.

As Bialystok and Hakuta (1994: 2) summarized it "Second languages... develop under an extremely heterogeneous set of conditions, far more diverse than the conditions under which children learn their native language. Cultures may vary in their practices of language socialization of infants and toddlers, but outcome of first-language acquisition remains universal. This cultural identification and absolute fluency, however, is not guaranteed outcome of second-language learning".

Furthermore, a bilingual education program might be confronted with a community setting where the only exposure to the second language is that child receives at school and where there is no real need in everyday life to use the second language whilst at the indigenous community. At the same time there may be other communities attended by the same program where the second language is used more often since such a community keeps close contact with urban settings.

Finally, there may also be sociopsychological factors influencing both the process and outcomes of second language learning by children in a bilingual program such as those related to the will and motivation of the learners. In certain colonial and subaltern situations children may be reluctant to learn the hegemonic language and their parents may not want them to speak such a language as their oppressors do even if this is the language necessary for achieving success in school. In such cases community elders and parents may also be reluctant to send their children to school.

Summarizing, there are various social, cultural and sociopsychological factors, and even individual ones related to the rhythm and pace of learning that influence the second language learning process. Therefore we should not assume as it is very often done that there is a universal way of learning a second language. On the contrary, bilingual education programs must be alert and sensitive to group and individual differences in order to provide the most adequate pedagogical assistance to help children acquire the second language they need to function adequately in a multilingual setting as well as to perform efficiently at school.

2. The mediation of the pupils' best known and most preferred language in becoming bilingual

The importance of the child's first language in second language learning has been highlighted in the preceding discussion. Here we would like to stress one of the factors

of this relationship that we consider of most importance for the development of educational programs in multilingual settings: the issue of language transfer.

But before doing so, a distinction must be made between the notion of first language or mother tongue and that of dominant language, or the language that the students' know best and use more frequently. We consider this difference of utmost importance, since many times, due to the complex psychosociolinguistic situations characteristic of multilingual societies, it is the dominant language and not necessarily the mother tongue or first language which deserves specific educational attention. In many indigenous areas of Latin America, for example, this difference calls for careful observation particularly within bilingual communities and/or families which choose either for an early switch from one language to the other in the socialization process, particularly when children approach school-age, or a socialization mediated by the second language of the parents and by their first ones. In such cases, the children may grow up as bilinguals as result of being exposed to both languages both at home in the community but one of them receives particular reinforcement in the home. This language may very well be these children's dominant language when they arrive at school. Hence, an operational sociolinguistic difference also needs to be made between monolingual and bilingual communities and families in the decision making regarding the language of instruction. This difference will help us determine if we are before a monolingual child or a bilingual one.

But whether the first or the dominant language it seems to be certain that children take advantage of their previous linguistic experience when learning a second language. When explaining the interdependency hypothesis, Cummins (1981, 1994:19) pointed out that:

To the extent that instruction in L_x is effective in promoting proficiency in L_x, transfer of this proficiency to L_y will occur provided there is adequate exposure to L_y (either in school or in the environment) and adequate motivation to learn L_y.

What linguistic transfer entails is that in a bilingual education program where an indigenous language is taught and used vis-à-vis a language of wider communication, instruction in the indigenous language aiming at developing the language arts as well as other subject areas, will also contribute to learning the language of wider communication since the competencies developed in the indigenous language are strongly related to those necessary for communicating in the language of wider communication. This seems to be particularly the case with reading and writing

competencies. The interdependency hypothesis has been confirmed in various research studies carried out both in the United States (Snow 1990, Ramirez et al 1991, Cazden 1992) and Canada (Genesee 1987) as well as in Latin America in pilot programs with indigenous minorized populations in various countries. In Puno, Peru, for example, after four years of bilingual instruction literacy competencies in bilingual children were evaluated and a significant correlation was found between reading and writing skills in Aymara or Quechua, their first language, and reading and writing in Spanish, their second language (cf. Rockwell et al 1989). Similar evidences were found earlier in Mexico, when children who had been taught to read and write in their mother tongue were later tested both in the indigenous language and in Spanish (Modiano 1973).

Regarding written language competencies, transfer does not only seem to operate from the mother tongue to the second language but also from the second to the first language. Another experiment to look into this issue was also conducted in Puno, Peru with Quechua speaking children who had learned to read and write in Spanish. These children were given a writing test in Quechua, the language they spoke fluently as their most preferred language in everyday situations, after having stimulated them orally to attempt writing in their native language. The results showed these children were able to write narrative texts in their mother tongue, although they had never done it before. To do so they resorted to the tools they had already acquired: the Spanish alphabet. The experiment also revealed that where a given Spanish symbol was not suitable to represent the indigenous language phonemes, the children would find systematic alternatives either establishing differences between letters of the Spanish alphabet or through letter duplication and forming digraph; thus showing their metalinguistic awareness and how it helped them solve the task (Mendoza 1988 referred to in Lopez 1995).

Likewise, in the Puno project evaluation we have referred to in this paper, children in control schools educated solely in Spanish through submersion were given the chance in fourth grade to write a narrative in the language of their choice –either Quechua or Aymara or Spanish. A good number of them chose the vernacular, although they had not learned to do it previously and were not familiar with the corresponding alphabet since Spanish had been the medium of their education, although the vernacular was constantly used orally in class by the teachers. Results turned out to be similar to those found by Mendoza (Rockwell et al 1989). Both experiments considered their findings supportive of the hypothesis of linguistic interdependence.

The importance of the mother tongue for second language learning is not only related to children's performance in reading and writing the second language. Sufficient evidence resulting from bilingual education experiments suggests that first language education and development also lay the foundations for second language learning in other aspects of linguistic development, such as phonological abilities and conversational competencies, for example. Children in bilingual education programs tend to speak more spontaneously and fluidly than children in control schools educated through the medium of the second language (Rockwell et al 1989, Jung et al 1989, Gottret 1995). Similarly, their second language pronunciation revealed that new and conflicting sounds turn out to be more accurate and shows a lesser level of interference than that usually found in vernacular speakers attempting to carry out a conversation in the new language (Zuñiga 1987 referred to in Lopez 1995).

In more general terms, it is also worth noting that "in Haiti, Creole-speaking students in both public and private schools, learning in grades 1-4 through their first language (Creole) acquired about as much knowledge in the second language (French) as those who had been exposed only to the second language" (Dutcher 1995:vii). Maya-speaking children obtained similar results in Guatemala after three years of bilingual schooling. After a year of pre-school education and the first two grades, they achieved higher scores in Spanish, their second language, than those obtained by their Maya-speaking peers who had been exposed only to the second language in the traditional all Spanish school. Additionally to it they were confident in their mother tongue and could not only speak it fluently but also read and produce texts in a Mayan language.

However, such findings (Stewart 1983, referred to in Lopez 1995) were not corroborated in another study also conducted in Guatemala in 1991 (Lopez 1995) since no significant difference was found in the area of Spanish as a second language between the experimental group and the control one. Nonetheless, the Guatemalan experience as well every other one commented here provide evidence that the use of vernaculars in education does not constitute an obstacle for learning, in general, or specifically for second language development, as it used to be considered. Furthermore, the fact that children in bilingual education programs obtain similar results to those of their peers with much more exposure to the second language is in itself an indicator in favor of first language teaching and use and not of submersion in the second language. One would normally expect children in the control group to obtain much better results due to the increased exposure to Spanish they receive. If one adds

to results such as these, as we shall do in the next section, those related to other curriculum subject area performance which tend to be better in bilingual classes than in submersion ones, then the benefit of first language development will be considered even greater.

The experiments we are making reference to tested the students after three or four years of curriculum innovation. Another aspect to be taken into account is the length of time devoted to the development of the children's first language. As we have already mentioned, it seems that the more time invested in first language development, the better the results obtained in the development of the second language. Earlier in this paper we referred to the fact that a child needs at least 12 years to develop competencies in his mother tongue and that it was important for bilingual education programs to provide a solid basis in the first language as well as extended opportunities for its development. Such a development was considered to be a prerequisite for linguistic transfer in benefit also of second language learning and development. It is promising to find out how in spite of a short span of time devoted to systematic first language development at school, children seem to be taking advantage of such a development and applying the linguistic knowledge and experiences previously acquired to the learning of a second language.

Should more time be devoted to first language development one could certainly expect these results to be even better. "In Nigeria, [for example,] Yoruba-speaking students learning in grades 1-6 in their first language (Yoruba) outperformed their peers, who had been learning in only grades 1-3 in that first language, on all tests of achievement in the second language (English)" (Dutcher 1995:vii).

The learners' maturity in their first language does not only seem to be related to second language development but to learning other additional languages, in general. In studies conducted in the Basque country it was found that the "pupils who know Basque as well as Spanish or French do not suffer when having to learn a foreign language [a language additional to their mother tongue and the second language]; in fact quite the opposite. It has been found that their knowledge of Basque and Spanish or French actually helps with learning a foreign language and that bilingual pupils obtain greater proficiency in some aspects of foreign languages than monolingual pupils" (cf. Garmendia and Agote 1997).

3. Lessons learned in the application and development of bilingual education programs

As it has already been suggested, the benefits of first language development are not restricted only to the greater proficiency observed in the second language. The evaluation of bilingual education programs conducted both with majority populations as well as with children from indigenous or minority groups provides further evidence related to the children's academic achievement as well as to their participation in class and to their development of self-respect and enhancement of their self-esteem. In this section we are going to give priority to the presentation of results obtained with indigenous and other minority groups. The categories used in this section are taken from Lopez 1995 & 1998, with minor adjustments.

3.1 Improved language competencies in the first language

It is interesting to note that in many cases children in bilingual education programs do not only outperform their peers in second language only education but also show an improved linguistic performance in their first language, something their peers have not been given the chance to develop. Ethnographic studies conducted in two rural vernacular speaking communities in Puno, Peru, showed that, after the first two years of the introduction of a bilingual Quechua-Spanish curriculum, the children attended by bilingual education developed a grammatically sound and more complete and complex use of their mother tongue. In comparison, their peers in a neighboring community, where classical Spanish submersion was imposed, children of the same grade and of comparable ages showed a much simpler use of their mother tongue and a higher reliance on Spanish loan words. Neither were these children capable to read or write in Quechua as their bilingually educated peers could certainly do, nor did they participate in class as actively and frequently as their peers in the bilingual schools did (cf. Hornberger 1988). These results were directly related to the emphasis given by the experimental program where teachers had received special training, textbooks and other first language materials had been prepared and the community had been encouraged to participate in the bilingual education program. The results obtained through this study pointing to a more effective level and type of content-based communication in the bilingual classrooms allow us to anticipate an equally better acquisition of school content and a better and more efficient use of school time. As we shall see, other studies conducted in this region not only reiterated Hornberger's findings, this time at fourth grade level, and also obtained empirical evidence regarding better pupil performance in class and a higher achievement in other subject areas (cf. Jung et al 1988). Likewise, better results were also found regarding other linguistic

competencies, such as reading comprehension in both the first and the second language and mathematical problem solving (cf. Rockwell et al 1988 and Jung et al 1988).

Also in Mexico, between 1964 and 1965 and later in 1973 a study conducted in 26 indigenous schools found that children who had learned to read in their first language achieved higher scores in reading comprehension in the second language than their peers attending only Spanish schools (Modiano 1973). Over 20 years later in Bolivia and New Zealand, children attending bilingual schools in the Aymara, Guarani and Quechua speaking regions corroborated such findings (Gottret et al 1995); a similar situation was found in Maori speaking schools of New Zealand (cf. Keegan 1996, referred to by Durie 1997).

In Ghana comparable results brought about not only higher levels of reading competencies but also feelings amongst the learners who had learned to read in Chumburung, their mother tongue (Hansford 1994, quoted in Obondo 1997). “Some new Chumburung literates have taught themselves to read Asante (a majority language) as well, and many non-schooled adults are now pressing for books to help them learn English (Hansford 1994:80, quoted in Obondo 1997).

3.2 Better achievement in other subject areas

Bilingual education programs do not only contribute to the improvement of children’s linguistic performance, but they also seem to have positive effects in other curriculum subject areas. The six year Primary Ile Ife project in Nigeria, for example, proved positive results in every subject area. According to Obondo (1997:29), the project “proved conclusively that:

- (i) the learners lost nothing and indeed gained more cognitively and linguistically by this exposure to six years of primary education through the medium of Yoruba;
- (ii) the exposure to Yoruba as the medium of instruction and English as a second language for the first six years did not in any way adversely affect achievement in secondary and tertiary levels of education;
- (iii) the learners understood mathematical and scientific concepts better when instructed in the mother tongue, and subsequently in English:
- (iv) the learners’ exposure to English as a second language placed them at an advantage as compared with their peers who used English as a medium of instruction; and

- (v) the results were similar in both urban and rural conditions.

On top of this the children attending this project benefited from and enriched curriculum, which depicted their cultural traits and worldviews as well as their everyday experiences (Ibid.).

Likewise, in the Guatemalan Bilingual Education Project, we have referred to, in 1983 with a sample of 40 experimental schools and 40 control ones, after three years of schooling children in the experimental schools obtained better grades in mathematics, social sciences and natural sciences (Stewart 1983). In Puno, Peru, after four years of bilingual education, students in the experimental schools outperformed their peers in mathematical problem solving and in social sciences and natural sciences tasks (Rockwell et al 1989). In a longitudinal study conducted in Bolivia between 1990 and 1995 with a sample of vernacular speaking indigenous communities and schools located in the Aymara, Guarani and Quechua speaking regions research corroborates the findings we have just referred to. In 1992 exit tests in the second grade reported favorable results in mathematics and science. Specifically regarding the area of mathematics, the reports offer empirical evidence in favor of the students in the bilingual program beginning in grade 2 and continuing through grade 4. The same tendency is observed in social sciences and natural sciences (Gottret 1995, quoted by Lopez 1995).

3.2 Incidence over the affective domain

The benefits of bilingual education are not only related to the pupils' cognitive development and to school achievement in more cognitively orientated subject areas. Empirical evidence is now available from various projects where certain affective variables have been studied. In the Basque country, for example, improved results were observed regarding the pupils' attitudes and motivation to learn Basque (Garmedia and Agote 1997). In 1987 in a very different context, the influence of bilingual education in the development of tolerance and self-respect was also determined. In Guatemala, a USAID educational evaluator commented that: "... the bilingual-bicultural character of the new programs filled with hope those who in the past felt frustrated and marginalized [allowing them to discover] that there were new and more peaceful means of achieving the expected social change, and not only through violent confrontation" (quoted in Lopez 1995).

The Bolivian bilingual education longitudinal study has been one of the very few to explicitly look into the affective domain. The study of this particular component revealed that: “the sample of girls and boys of PEIB [the bilingual education project’s acronym] has developed a significantly higher level of self-esteem when compared to the student control sample” (Gottret 1995:199, quoted in Lopez 1995). They also reported a greater capacity for adaptation as well as a more tolerant attitude in cases of frustration. Referring to the Maori case, Durie (1997:19) also reports “social improvements such as self-confidence and school attendance”.

3.3 Increased participation and direct involvement of children in learning

Another important contribution of the introduction of the first language as a formal language of education is related to the increased participation of children in class. Such increased participation may be related to an equally augmented self-esteem and self-confidence as well as to the very fact of understanding what goes on in the classroom now the language of the classroom is that used outside in the indigenous community. The various studies conducted in Latin America (Modiano 1973, Hornberger 1988, Rockwell et al 1989, Jung et al 1989, Gottret 1995 and Muñoz 1999, amongst others) specifically refer to the changes in teaching processes and methodologies resulting from a more active participation of boys and girls. Similar findings are also reported in Durie 1997 for the Maori case in New Zealand and Obondo 1997 for the Yoruba case in Nigeria.

Two other areas in which one could analyze the contributions of bilingual education in general and more specifically the contributions of the inclusion and teaching of the children’s first language in the school curriculum in multilingual settings are those of increased community and / or popular participation and of the improvement of the educational system in terms of attendance, school drop out and repetition. Regarding the former, evidence has been found in several countries as to the increased and better quality participation of parents and of local communities in general. This increased participation is the result of the use of a language in school that everybody can understand. This very fact allows parents and community members to intervene in the management of education even regarding the pedagogical implementation of bilingual education. That is why some of us have referred to the mobilizing effect of bilingual education (Lopez 1995).

Finally, in several cases revised in this paper evidence is also shown about the positive effect that the use of the children’s first language and/or bilingual education has over

attendance, drop out and repetition. These are three of the indicators most often used to prove the poor quality of education when developed in indigenous or minority areas. Research shows that the introduction of the pupils' mother tongue in the school curriculum also contributes to the improvement of such indicators.

4. Perspectives and future directions

The successful bilingual practices across a number of countries show that a bilingual education in multilingual and multicultural countries should consider first and second language development both as specific curriculum subject areas as well as media of content-based instruction. Additionally, a bilingual education program should also consider the incorporation of a third language, for bilingual students to expand their language competencies.

As we have seen there seems to be a close relationship between first language development and learning a second and an additional language. Length of time also seems to be a factor which deserves careful consideration since the longer the period devoted to first language development the better the results in the second or third language the student learns.

On the basis of results such as the ones reviewed in this paper, a clear and well balanced educational and language policy should be established taking seriously into account the historical and sociocultural and linguistic conditions that have intervened in the configuration of the specific sociolinguistic situation we now face. As Tucker 1998 emphasizes models cannot be easily transported from their original place of discovery to another context where the sociolinguistic and political conditions may be very different. "What can and should be imported is a cycle of discovery, the continual process of evaluation, theory building, generation of hypotheses, experimentation and further evaluation. Multilingual education is a challenging undertaking which necessitates attending to a complex set of interacting educational, sociolinguistic, economic, and political factors –these vary situation by situation, and must remain the object of continual formative, and ultimately summative, evaluation (Tucker 1998:12).

For this discovery to be possible, bilingual education programs would have to make sure that careful attention is given at least to the following components in the implementation process:

- (i) First language linguistic elaboration in order to facilitate its ample use as the main language of education in the different areas of the school

curriculum as well as to empower children belonging to subaltern societies in general and to indigenous societies in particular in order to reinforce these children's self-image, self-respect and confidence in their ethnolinguistic group's main vehicle of everyday communication; such elaboration such initially pay attention to lexical development as well as to the creation and development of a variety of styles and registers to facilitate the use of indigenous languages in conveying content related to the different curriculum areas and particularly in a decontextualized manner;

- (ii) Effective first language development through the inclusion of a specific language arts program in the pupils' first language through at least the complete primary education cycle of six to eight years, emphasizing literacy and the production of written texts; the emphasis on the production of written texts should be closely related to the need to contribute, on the one hand, to the development of a wide range of genre and to a written literature in the indigenous language, and, on the other hand, to the broader aim of promoting the literalization of indigenous societies and their inclusion in the written world;
- (iii) Effective second language teaching and learning constructed on the basis of the children's first language development, in order to prepare them to function efficiently in a society where now at least two if not three languages are needed; on this basis, children should also be given the possibility to learn an additional or third language; second language development should pay attention to the different language arts and transcend the sociocommunicative sphere of language use in order to prepare the children to also resort to the second language as a medium of learning;
- (iv) Curriculum diversification and enrichment based on an intercultural perspective so as to satisfy the learners' basic learning needs and to take seriously into account the specific sociocultural and sociolinguistic contexts the children belong; in so doing, the school becomes a necessary link between the children's inner world and the wider society and looks for complementarity rather than opposition between traditional

society knowledge and practices and those more characteristic of the West;

- (v) Content-based instruction in both languages once the children have acquired cognitive academic language proficiency in the second language; careful attention should be given to language distribution and use in the classroom so as to avoid the risk of constraining the first language only to those curriculum areas or components more closely related to the traditional knowledge and practices;
- (vi) Efficient teacher education, both pre and in-service, in order to prepare the bilingual educators needed not only to implement these new programs but also and more importantly to design the new strategies needed in the specific situations and cases where a bilingual scheme needs to be developed; such educators should also develop the social and cultural competencies necessary for recognizing and actively accepting and promoting the education role the local communities and its members should play in the development of the bilingual education program;
- (vii) True and effective community participation in the various phases of program implementation and in relation to both aspects of school management and of curriculum design and implementation.

As we can see here we adhere to an educational model which on the basis of the ideals of maintenance and development bilingual education aims at empowering indigenous societies and minority or minorized ethnolinguistic groups. Research carried out in different parts of the world allows dreaming with educational strategies designed to truly empower minorities. Adequate decisions in language choice and implementation in schools and classrooms can certainly contribute to this aim, provided that the societies the children belong to support these efforts and agree with the aim of reinforcing local languages and cultures. For this to happen every bilingual education program, and any innovative educational project, for that matter, must permanently inform the children's parents and local leaders and authorities about the project's objectives and strategies and should also consult them as to the best way of carrying them out. Only with permanent parent support and participation can the choice and effective use of indigenous and/or local languages as languages of instruction achieve

the goal of contributing to the children's development of self-image, self-respect and self-esteem. This resultant self-confidence will contribute to the liberation of spontaneity, initiative and creativity in children belonging to subaltern societies. Trusting themselves and developing solid social, cultural and linguistic self-confidence indigenous and minority children could achieve school success and thus contribute to the social and economic development of the societies they belong to.

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