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Mexico

Juan Carlos Mijangos-Noh
Universidad Autónoma de Yucatán

Fabiola Romero-Gamboa
Save the Children Foundation

Please address all correspondence to:

Juan Carlos Mijangos-Noh

Universidad Autónoma de Yucatán

Facultad de Educación

Calle 41 s/n esquina con 14, colonia Industrial

Exterrenos del Fénix, Mérida, Yucatán, México.

CP. 97150

Phone: +52 999 922 46 00

Fax: +52 999 922 45 91

E-mail: jc.mijangos@uady.mx

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Juan Carlos Mijangos-Noh

Universidad Autónoma de Yucatán

Fabiola Romero Gamboa

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In this paper we present our study of the use of Mayan and Spanish in nine groups of pupils in bilingual elementary schools in the Mayan area of the Yucatan State, Mexico. Michael Cole's, as well as Guillermo Bonfil's, perspectives were used for the data analysis, in the sense of considering language as a cultural artifact, and an element of identity. Language mediates the educational process and allows, or does not allow, obtaining the official goals set by the Mexican State in relation to bilingual and intercultural education, as is discussed in this work.

Many of the more recent and quoted studies on bilingualism in the classroom have these characteristics:

- a) Studies of immigrant populations (e.g. Pappamihiel, 2002).
- b) Investigations relative to languages that are minority in the studied context (e.g. Potowski, 2004; Kells, 2002).
- c) Research devoted to the specific acquisition of a second language (L2) or foreign language (e.g. Mondada, 2004, Morris, 2002).
- d) Searches in which the involved languages have, inside or outside the studied context, an ample written use (e.g. Aw, 2004; Mori, 2004).

Our search for scientific papers devoted to the use of an indigenous language in the classroom just encountered two investigations (Morgan, 2005; Paciotto, 2004). The first one is related to the Ojibwe people at University. The second concerns Tarahumara children in village schools, but that research is addressed more to the assessment of a special policy program in Chihuahua, not more generally to the use of language in classrooms.

As our search shows, in Mexico there are few published studies about the education addressed to the indigenous populations (Medina, 2007; Bertely, 1998; Schmelkes, 2004; Paciotto, 2004; Francis & Reyhner, 2002; Francis, 2000), and even fewer related to the use of two different languages, one of them indigenous, in the classroom.

The links between culture, language and education

The examination of the links between culture, language, and education allows us to comprehend the characteristics and consequences of the use of language in educational processes. For this reason, it is important to clarify the specific forms in which we use these concepts in this paper.

The concept of culture has been broadly and deeply studied from diverse philosophical and theoretical perspectives, each one emphasizing certain aspects, depending on the particular objective. However, despite the elaboration of those different concepts, culture persists as an unfinished conceptual entity that is constantly changing.

Because of the diversity of the concept of culture, which is outside the scope of this paper, it is necessary to select one of those concepts to orient the analysis of the use of language in bilingual elementary schools classrooms.

In this paper, we follow Guillermo Bonfil Batalla's (2005) notion of culture. This author argues that culture includes very diverse elements, such as:

- The material tools invented or adopted over time by the social system;
- The forms of social organization transmitted by heritage, which are observed among the family members, the community and the people;
- The heritage of knowledge and values of the group.
- Elements of culture are also the codes that permit the individuals in the group to establish communication and understanding: the language, which shows a particular vision of the world, and the ideas of the group developed throughout history.
- Bonfil also considers as a part of culture the feelings that prompt people to participate, accept, or believe in conjunction with other members of the group.

In all these elements history plays an important role because it has defined the "who we are," and that entity is the depository and beneficiary of the culture. Because of that, each ethnic group establishes its own limits and rules: a person is a part of a people, a people expressed through identity and language.

As Michael Cole observed, in anthropology a debate has existed regarding the dichotomization of culture. This is conceived as either external to the person, the products and

material manifestations of human action, or as a reservoir of knowledge and beliefs. Cole suggests that a different approach emerge with the cognitive revolution in psychology and the appearance of Noam Chomsky's linguistics. The study of culture as patterns of behavior and material products appears to have given way to the tradition that considers culture to be composed entirely of learned symbols and shared systems of meaning—the ideal aspects of culture—that are located in a person's mind. (Cole, 2000: 118)

Cole understands culture through the concept of artifact, which is simultaneously ideal (internal) and material (external). The author offers an alternative to the debate about culture, the analysis of his proposal permits us a wider landscape of the concept of culture, and establishes methodological paths for our studies about the use of Spanish and Maya languages in classrooms. Cole states that an artifact is an aspect of the material world modified over the history of its incorporation into goal-directed human action (Cole, 2000: 115). This means that a fusion of the approaches that understand culture as internal and external, then, occurs from the elucidation of the "double nature of artifacts." (Cole, 2000:120)

In the sense that all cultural elements and all cultural characteristics have a subjective aspect as well as an objective one (Cole, 2000: 116), the previous assertion helps us to elucidates the use of the concept of culture in this study. Thus, it is important to understand culture as composed of coherently organized elements that are expressed through some kind of artifact, such as significant symbols, which through interpretation actually form the every day life of a group. (Cole, 2000: 119)

The reality of daily life in which the groups develop, composed of social practices (Cole, 2000: 132) conditioned by pragmatic reason, is influenced by the things happening, the things that happened or the things yet to happen. It is in that world of daily life where culture emanates, and individuals acquire the assembly of elements characteristic of their social group. The

incorporation process through which an individual comes to consider him or herself as a part of a group, with the capacity to read the social reality in the same way in which the group does, is the socialization process. In this way, culture evokes a series of practices continued throughout history, generation to generation, by the socialization processes.

The concept of language plays a preponderant role as a basic element of culture as a phenomenon bound to think and socialization, including formal education. We will present the theoretical position from which we understand this aspect of culture, inextricably connected with the theory of Cole. Lenkersdorf (1998) points out that language has the function to designate: when speaking things receive names according to their culturally defined aspects. This quality does not contradict Cole's proposal to contemplate language as a device, like a system of signs that provide "objectifications" which have the dual characteristic of being simultaneously ideal and material. Also, the function of language, proposed by Vygotski (2000) as an instrument of the intellectual act expressed in perception, memory, reasoning and imagination, strongly overlaps with the idea of cultural mediation that Cole postulates.

With the acquisition of language in its diverse oral, written and symbolic forms, it is necessary that the individuals not only perceive but also participate in the activities that language is helping to create (Cole, 200:183). This is important because as children participate in culturally organized activities and make an effort to understand social objects and relationships, they simultaneously gain control of its means and of themselves and recreate the culture in which they have been born, recreating the language of their ancestors. In an ideal way, all of that it is a part of the process of education.

In the case reported in this paper the Mayan children have very few opportunities to use their mother tongue in the process of acquisition of reading and writing skills. This occurs in a context where they and their ancestors are the original inhabitants of the Yucatan, and also the users

of the majority language in the village, as is presented and discussed in the pages below. However, Mayan language has a reduced use as a written language in contexts outside the school, and even inside the school, as will be noted.

Method

For this study we observed nine groups of bilingual primary education in the Mexican state of Yucatan. A total of 95 complete sessions and five partial classes were recorded ethnographically: two groups of first graders, two of second, one of third, one of fourth, one of fifth and two of sixth graders. Altogether 357 hours and 15 minutes of observation were recorded through field notes and video.

Data were analyzed using Max QDA software.

Results

In the analysis of the ethnographic notes using the software Max QDA, 652 occasions were detected when the Mayan language was used and 359 occasions when the language used was Spanish. Thus 64.49% of the classes were in Mayan and 35.51% in Spanish.

In a more meticulous examination of the ethnographic notations it was possible to find 290 situations in Spanish and 443 in Mayan language. However the percentages are still very similar: 57.30% in Mayan and 42.7% in Spanish.

Of the 443 occasions where the Mayan was used, 273 were children using the language. This 61.62% of the use of the Mayan language implies the teachers used the Mayan language in the 38.38% of the registered occasion.

Children used the Mayan language just 135 of the 290 occasions when the Spanish language was recorded. Thus the 54% of the use of the Spanish correspond to the teachers' usage.

The analysis of the specific forms of language use by the children in classroom was based on these numbers. The following table allows us to compare the various forms of use of the language by the students:

TABLE 1

Children: uses of languages in classrooms.

Use of languages	Mayan	Spanish
To talk to peers	44.32%	14.81%
To talk to the teacher	17.21%	8.88%
To talk with parents who visit the classroom	0.73%	00.00%
To talk to the observer	28.93%	12.59%
To read or write	7.69%	57.77%
To sing	1.09%	2.96%
To translate	0.00%	2.96%
Total	100%	100%

In table number 2 it is presented the use of the language by teachers in classrooms:

TABLE 2

Teachers: uses of languages in classrooms.

	Mayan	Spanish
Uses of languages by teachers	Percentage	
To give instructions, to clarify and to make questions	68.82%	56.77%
To give written instructions	4.7%	14.83%
To read aloud	2.35%	14.83%

	Mayan	Spanish
Uses of languages by teachers	Percentage	7.09%
To translate	1.76%	1.93%
To read children's works	0%	1.93%
Total	100%	100%

The next paragraphs contain a reflection about the meaning of the data, using the theoretical framework previously presented.

The Uses of Languages and Their Implications

It is easy to notice from the data previously presented that the classroom groups we observed used two different cultural artifacts as communication media: the Mayan and Spanish languages. This requires an attempt at reflecting about how each of the languages is used, the relationship between the languages, and the pedagogical consequences of their uses inside and outside the classroom.

With the obvious fact of Mayan used as the dominant oral language, some nuances must be examined. From the beginning it is necessary to point out that the relationships among the children are mainly in the Mayan language, as are the major part of the conversations between teacher and parents. This means that the main cultural artifact in the context of the every day activities in classroom is the Mayan language. That is, the major part of the children and very probably a very large group of parents are living, thinking and naming their world in Mayan language.

In this light, it is necessary to point out that the highest classroom percentage of participation in Spanish is by the teachers. In our interpretation, the cultural context impels the

teachers to use the Mayan language, but not by choice, they just use Mayan as a lingua franca to enable communication with the children.

This statement could seem excessive, but it must be considered that the Spanish language is the language used in the literacy process, and mainly the educational process at school is focused on Spanish literacy.

There are consequences of this disparity in the use of two different cultural artifacts, two different languages by teachers and students in different aspects. Here, it is important to emphasize that the use of the second language of the children as the main tool used by teachers in the literacy process represents a serious disadvantage for the Mayan children in achieving the educational goals stated by the Mexican government. The slight experience of the Mayan children in writing and reading in their maternal language through the school's educational process directly affects the student's lack of enrichment in their own language. In addition, the situation represents a serious obstacle for the process of acquisition of the cultural artifact of writing. Mayan children, under the present conditions in school, should supposedly learn a second language, learn simultaneously to read and write, plus do all of the above with materials not related culturally with their environment. Besides, teachers do not use any method to help the children to improve their writing skills, which is obvious from the field notes where in not a single case is it possible to identify any action of the teachers to check the children's written work in the Mayan language.

It is important to highlight this fact: the language mainly used by teachers in reprimanding the children is Maya. This, along with the scarce use of Mayan in writing and reading exercises in the classroom, probably makes understandable dialogues such as this one with a little girl of third grade:

- Why you don't speak Mayan?
- Because I don't like it.

— In your house your family speaks Maya?

— My mother speaks Maya, but she speaks to me in Spanish; also my brothers speak Maya, but they speak to me in Spanish. My mother doesn't like I speak Maya (sic). (Personal communication)

One possible interpretation of the data is that the uses of language in classrooms are evidences of the inequity also observed in the wider social contexts. Here, the approaches of Cole and Bonfil regarding language are linked with identity processes, acquiring a specific form and revealing the discriminatory context of the cultural relationship, which discriminates against the Mayan language in the educational processes in classroom as in the general society. The Mayan language is not just excluded of the processes of literacy, it is also denied by some parents to the children because they perceive the risk of discrimination related with the use of Mayan language by their sons and daughters. They prefer to not speak in the Mayan language to their children because it is not useful in class and it is also discriminated by the dominant culture in the Yucatecan society, which is a cause of Mayan language attrition.

Despite all of this, the oral use of the Mayan language in the classroom is strength, which could be the base of the improvement of the teaching-learning processes. As Cole proves, the mastery of the maternal language provides the power to signify, and this power grows as writing skills grow. Beginning with these skills it is possible to improve other areas of learning like the sciences, and even other languages.

For us, the task ahead must focus in this way and implies a huge list of actions: creations of new materials in Mayan language, redesigning the curriculum addressed to Mayan children, teacher training in the use of these new materials, etc. Based on information from our current investigations we are taking actions to accomplish these tasks.

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AUTHORS' NOTE

Juan Carlos Mijangos-Noh, Facultad de Educación, Universidad Autónoma de Yucatán; Fabiola Romero-Gamboa, Instituto de Ciencias Sociales de Mérida.

Fabiola Romero-Gamboa is now working for the Save the Children Foundation.

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