GLOCALIZED PROPOSAL FOR INDIGENOUS EDUCATION BASED ON ETHNOMATHEMATICS AND ONTOGENESIS: THE CASE OF THE NUMERICAL CLASSIFIERS OF THE BRIBRI LANGUAGE

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A pedagogical action proposal for indigenous mathematics education is presented incorporating reflections on the relationships between ontogenesis and ethnomathematics, based on the results of a research of numerical classifiers in the Bribri language, incorporating the emic, ethic and dialogical viewpoints.

The Ethnomathematics Program considers mathematics, culture, and language inseparable, being culture the context in which the human subject develops within a group, and on which depends the way of thinking, of conceptualizing everything that surrounds him, and of nominating and expressing through language everything he thinks.

From the emic perspective, the basis of oral quantification in the Bribri language is the decimal, but they use numerical classifiers, which, according to Murillo (2009), are a type of determiner that organizes nouns in a set of culturally conceived categories that do not necessarily coincide with the actual characteristics of the referents in the real world. Constenla (1991) describes numerical classifiers as "elements that obligatorily accompany numerals, when they modify or replace nouns, to indicate the class to which they belong" (p. 116). The classification of objects of the material and immaterial world responds to their cultural worldview. Some examples of the classes into which the Bribri culture classifies objects are A) Elongated class: long-tailed mammals and reptiles, the stick of the Awá, elongated tubers, etc. B) Group or set class: coin handles, bundles of banknotes, flocks of birds or butterflies, etc. C) Flat class: months, birds with outstretched wings, clothes, tables, tortillas, etc. D) Round class: years, short-tailed mammals, turtles, birds without movement, round fruits. E) Elka class: bales of meat, packages, products by the pound, etc. The ethical perspective analyzes the evolution of the counting systems that human beings have used, and, in this analysis, it can be noted that there is an important tensor: simplification.

In indigenous groups, there is a situation of educational backwardness due to the existence of a monocultural curriculum and teachers who are not prepared to develop their work with groups of minority cultures, from an intercultural perspective (Oliveras & Gavarrete, 2012). The proposal of pedagogical action for the indigenous mathematics education of the Bribri people pursues a balance of knowledge that is achieved through glocalization, which, according to Orey & Rosa (2015), is defined as the relationship between local and global knowledge and is related to a dialogic approach to knowledge; where dialogue occurs between the ethical and ethical visions of the members of culturally differentiated groups.

References

Constenla, A. (1991). Las lenguas del área intermedia: una introducción a su estudio areal. San José: Editorial UCR.

Murillo, J. M. (2009). The Nominal Phrase Ngäbére. Forma y Función. 22(2), 43-69.

Oliveras, M.L. y Gavarrete, M. E. (2012). Modelo de aplicación de etnomatemáticas en la formación de profesores para contextos indígenas en Costa Rica. Revista Latinoamericana de Investigación en Matemática Educativa, 15(3), 339-372.

Orey, D. & Rosa, M. (2015). Three approaches in the research field of ethnomodeling: emic (local), etic (global), and dialogical (glocal). Revista Latinoamericana de Etnomatemática, 8(2), 364-380.