

1106-D1-2793

Ivan Lina-Ramos* (ivanlinacedart@gmail.com), Raul Herrera #92, Barrio San Miguel. Delegacion: Iztapalapa, Mexico, City, 09360, and **Alma Fabiola Rangel-Chavez**. *The role of an alternative natural language based on Mesoamerican concepts in teaching algebraic processes*. Preliminary report.

The purpose of this pilot study was to explore an alternative natural language based on the Mesoamerican concept of complementary opposites for teaching Algebra. The goal is to develop a learning-oriented pedagogy based on the Mesoamerican cosmovision.

Complementary opposites is the concept that refers to the way Mesoamerican societies organize the world in paired dualities, like dry and wet or life and death (Lopez Austin, 2008). Based on this concept and using different narratives from Aztec myths, we introduced the term complement, which relates to the inverse operation used in algebraic processes.

Data was obtained by observing students' mathematical discourses in a Mexican high school, while they solved algebraic problems in teams. A frequency analysis was made comparing the use of precise mathematical language versus alternative natural language. Results show that medium and low-achieving students quickly adopted the alternative natural language, reducing their algebraic misconceptions and improving their mathematics performance. High-achieving students continued using the precise mathematical language. However, all students showed empathy for the use of Mesoamerican concepts in their algebraic learning and fostered students accountability for learning. (Received September 16, 2014)