Didactic interactions between France and Latin-America. The case of Mexico *Avenilde Romo y Francois Pluvinage*

Currently France and Latino America



Didactic interactions between France and Latin-America. The case of Mexico

JULY 2016



Currently

Universidades de Grenoble, Lille, Montpellier, Paris, Rouen, Strasbourg y los IREMS, ESPE e IFE

France and Mexico

DME CINVESTAV DIE CINVESTAV CICATA – IPN Tecnológico de Monterrey Universidad Autónoma de Guerrero Universidad de Guadalajara Universidad de Zacatecas

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Didactic interactions between France and Mexico have involved different institutions, themes, theories, methodologies and researchers



Center for Advanced Research and Studies





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Department for Mathematics Education





1975 Eugenio Filloy and Carlos Imaz





Jesús Alarcón (nickname Papini) and Fernando Hitt, went to Strasbourg to study their doctoral degrees





Research that focuses on random phenomena and probability

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- DME's inclusion in the *National Register of Quality Graduate Programs* (*PNPC*)
- Research about the rational numbers, in algebra, probability, functions.
- **Frameworks**: epistemology, cognition sciences, socio-cultural theories of learning
- **Participation in Congresses**: ICME, CIEAEM, PME, PME NA, RELME, Iberoamérica, etc.
- International status of the journal Relime







Department of Educational Research - TSD

- Curricular reform 1993
- Program for Actualizing Mathematics Teachers 1995

La enseñanza de las MATEMÁTICAS en la escuela primaria



Introducción

umerosos estudios sobre el aprendizaje y la enseñanza har amostrado que los nihos no son simplemente receptores que cumulan la información que les dan los adultos, sino que apreen modificando ideas anteriores al interactuar con situaciones roblemáticas nevevas. Desde esta perspectiva, las matemáticas deben ser para las

frente a la necesidad de resolver problemas. Para aprender, los alumnos necesitan "hacer matemáticas", es decir, precisan enfrentar numerosas situaciones que les presente un problema, uneto, generar sus propios recursos para resolver las, utilizando los conocimientos que ya poseen.

Sus recursos serán informales al principio, peropoco apoco, cola experiencia, la interacción con sus compañeros y la ayuda di maestro, evolucionarán hacia la formalización del concomiento En consecuencia, los conocimientos matemáticos y los probié mas no pueden separarse. No se trata de "aprender" matemáticos para después "aplicarlas" a la resolución de problemas, sino d aprender matemáticas al resolver problemas.

Esta concepción didáctica implica recuperar los significados de los conocimientos, contextualizarlos nuevamente, es decir ponerlos en situaciones en las que éstos cobren sentido para e alumno, al permitirie resolver los problemas que se le plantean En este Taller, se ofrecen experiencias para que usted, maes tro, pueda ampliar, desde esta perspectiva, sus conocimientos sobre los contenidos matemáticos que se trabajan en la educació primaria, se exploran los problemas que den sentido y muestran la utilidad de los concimientos matemáticos. Asimismo, se analizar las condiciones didácticas que pueden favorecer su adquesión Al mismo tiempo, podrá experimentar una manera distinta -más grata, creativa e interesante- de hacer y aprender matemáticas



Numerous studies of teaching and learning demonstrate that children *are not* simple receptors who accumulate information given by adults, but that **they learn by modifying previous ideas through interaction with new problematic situations**. In this perspective, math should be a tool that students use to re-create and evolve when faced with the need to solve problems

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Center in Applied Science and Advanced Technology

- In 2000, the Center in Applied Science and Advanced Technology created On-line Programs for Mathematics Education (PROME) at the Master's and Doctorate levels for math
- Some of the students currently enrolled come from such Latin American countries as Argentina, Chile, Colombia and Uruguay

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Learning units in collaboration

The 'learning units' (LU) on which the programs are based have been designed with aim of building a bridge between research in mathematics education and teaching practice



Online resources to learning mathematics at university level 'e-math' platform



Resources by and for math teachers (2013)



The role of language in math activities (2015)

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Currents originating in Latin America

Ethnomathematics



Socioepistemology

Created by a research group led by Ricardo Cantoral. Its main focus is the social construction of mathematical knowledge.







Some perspectives

- Differential and integral calculus: a seminar and annual meeting with participation by French researchers, invited speakers and workshop organizers that offers spaces for new collaborations
- Design of Study and Research Paths for training future technicians and professionals that set out from analyses of professional contexts, in collaboration with Latin American, French and Spanish researchers
- Studies of complementarity between the socioepistemological and ATD theories by Latin American and French researchers

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