TEACHERS’ USE OF TECHNOLOGY IN MEXICAN JUNIOR SECONDARY SCHOOLS

Maria Trigueros  Ana Isabel Sacristán
ITAM, Mexico  Cinvestav, Mexico
trigue@itam.mx  asacrist@cinvestav.mx
with
Nadia Gil, Estela Navarro, Susana Millán, Gabriela Carral & Esperanza Sainz

We present results from a study that tries to answer important questions which have emerged after many years of use of computational technologies in the mathematics classes of public junior secondary schools in Mexico.

In 1997, a still ongoing national program, the Teaching Mathematics with Technology – EMAT – project was introduced throughout Mexico by the Ministry of Education. Its aim is to incorporate computational tools (TI Calculators, Excel, Cabri-Géomètre, and Logo) to junior secondary mathematics classrooms using a research-based pedagogical approach, specifically designed to foster students’ exploration, problem solving and whole class discussion. Teachers all over the country were trained for the implementation in classrooms of the tools, the approach and student-centered activities.

Given the importance and impact of this project, as part of the evaluation team, we were concerned about how teachers have assimilated the main ideas of the project and how they use them in their classes. For this, we follow the enactivism theory of knowing, which considers learning as an effective or adequate action (Maturana & Varela, 1992); from this enactivist perspective, the use of computer tools is part of human living experience and they are used to represent and negotiate cultural experience (Davis et al., 2000).

Using a combination of methodologies (including observations of technology-based classes in a sample of schools across the country, and interviews) after three years of study, we have found that teachers have many difficulties when trying to use technology to teach mathematics. Some of these problems are related to teachers’ difficulties regarding the philosophy and pedagogical approach of the project. Other difficulties are related to teachers’ knowledge of mathematics and to their fears on the use of technology.

On the other hand, teachers have found motivation for using the technological tools and materials mainly in response to how their students work with proposed activities, but they still have a lot of work to do for gaining experience and developing their practice in order to use the technology effectively.

In the poster we will present the details of the project, its framework, the methodology of the study and the results obtained.

Acknowledgements

We are grateful for the support of the following organizations in Mexico: SEP, ILCE, OEI and CONACYT – particularly the CONACYT Research Grants No. G26338S and No. 44632.

References