

Mobile Technologies within Learning Environments

The Omar Dengo Foundation Experience¹

Main Initiatives

[2003]

Beginning of the “mixed labs” experience, whereby portable and desktop computers were placed together within the learning environment.

[2006]

Beginning of the research Project at “El Silencio” under the 1:1 model using standard mobile technologies (MIT – PRONIE MEP-FOD).

[2007]

Beginning of the Research and Development of Learning Environments with Mobile Technologies Program at the Fidel Chaves School under the 1:4 model (Intel Teach to the Future® – PRONIE MEP-FOD).

Research on the scope of the OLPC platform.

[2008]

Formal establishment of the Research and Development of Learning Environments with Mobile Technologies Program.

Beginning of the 1:1 Generation Project in the Edgar Cervantes School under the 1:1 model using ClassMate (Microsoft – FOD – PRONIE MEP-FOD).

Beginning of the Mobile Technologies in Education Project in 10 primary school institutions under the 1:1 model using ClassMate (INTEL-MEP-FOD).

Beginning of the OLPC experience at El Silencio.

The Omar Dengo Foundation [ODF] first introduced portable computers in school environments in 2003 within the framework of the National Program for Educational Informatics MEP-FOD. Since then, it has explored different implementation models as possible alternatives for innovating learning environments and taking advantage of the opportunities mobile technologies offer in both expanding and connecting learning spaces and times.

After studying the frequent dissemination and introduction of portable computers and other mobile devices in learning environments around the world, the ODF became interested in researching these models with the purpose of understanding their impact in learning and teaching processes. In this manner, the ODF, based on its twenty-one years of experience, hopes to contribute to the design and implementation of proposals that maximize the potential of these technologies as learning resources in both formal and informal settings.

With that goal in mind, the ODF created the Research and Development of Learning Environments with Mobile Technologies Program in 2008, which articulates the different organizational initiatives surrounding this field and fosters their improvement based on its professionals’ knowledge and experiences on the topic.

In the following pages you will find some of the initiatives that are currently being carried out around the mobile technologies in learning environments:

Mixed Educational Informatics Laboratories

The National Program for Educational Informatics MEP – FOD currently has 209 school laboratories that operate under a mixed model that combines portable computers and desktops. This innovative cross-platform process began in 2003.

¹ Quesada, A. [2009]. Summary of experience implementing mobile technologies within the framework of the PRONIE MEP-FOD.

This model allows both students and educators the opportunity to expand classroom boundaries and connect with other experiences and learning environments, both inside and outside the academic institution.

Experiences the 1:1 Model

El Silencio School

The El Silencio School is a one-teacher school located in the northern part of the country that has participated, since 2005, in the National Program for Educational Informatics MEP-FOD. Its rural location offers a particularly valuable scenario that allows us to provoke and measure the influence of the school's activity on community development.



The introduction of portable computers in the El Silencio School originated in 2006 after Dr. Claudia Urrea of the Massachusetts Institute of Technology (MIT) based her doctorate dissertation on developing an exploratory project in which a learning environment was redesigned based on the intervention of mobile technologies and robotics. After the conclusion of Dr. Urrea's field work, the project at the El Silencio School was placed under the supervision of the group that oversees the "Computer in the Classroom" modality, which is responsible for developing all activities within the Program for National Informatics MEP-FOD in one-teacher schools.



As of August 2008, the El Silencio experience, which was initiated with standard mobile technology, is exploring the use of OLPC's XO computers.

An outstanding characteristic of this experience lies in the fact that it maximizes the conditions particular to one-teacher schools by allowing technology to play a starring role in the exploration of topics whereby students design projects through "production companies" they themselves integrate.

Since one-teacher schools allow students of all levels to share the same learning space and the topics are established based on difficulty level, project elaboration proves to be a very appropriate learning approach. Thus, the work with the portable computer itself constitutes a significant intervention in that it allows students with greater experience to construct the educational scaffolding for the younger ones².

Another characteristic of this project's implementation is the parents' participation in the teaching-learning process. By taking the computers home, the children become mediators in their

² The National Program for Educational Informatics MEP-FOD carries out its "Child Mediator" program in one-teacher schools, whereby children with greater knowledge and experience with digital technologies serve as learning supports for their peers.

parents' digital educational process.

Next Steps

Aside from the projects described, the Research and Development of Learning Environments with Digital Technology Program will take on the following actions in 2009:

- *Academic exchange between supervisors of active projects to discuss lessons learned*
- *Construction of a histogram of learning experiences using mobile technologies in Latin and North America: main findings and lessons learned*
- *Forum on M-Learning*
- *Construction and experimental implementation of a model designed to orient learning experiences towards the use of digital technologies in the classroom*