



Digital Government Strategies: Good Practices



Mexico: Digital Inclusion and Literacy Pilot Program

The OECD Council adopted on 15 July 2014 the Recommendation on Digital Government Strategies. The Recommendation provides a set of 12 principles structured around 3 pillars. The OECD Secretariat is developing a Digital Government Policy Toolkit to support OECD member countries and non-member adhering countries with the implementation of the Recommendation. This practice was submitted by the government of Mexico to be considered as a good practice in the implementation of one or more of the principles contained in the Recommendation.

Description of the practice:

Organisation:	Literacy and Digital inclusion, Office for the National Digital Strategy of the Mexican Presidency
Name of the practice:	Digital Inclusion and Literacy Pilot Program
Principles implemented:	<p><u>Principle 2</u> - Encourage engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery.</p> <p><u>Principle 6</u> - Ensure coherent use of digital technologies across policy areas and levels of government</p> <p><u>Principle 8</u> - Strengthen international co-operation with other governments</p> <p><u>Principle 10</u> - Reinforce institutional capacities to manage and monitor projects' implementation</p>

Description: The Ministry of Education launched a Program to improve education by using digital tools. The Digital Inclusion and Literacy Program started in 2013 and it's expected to continue until 2018. The program consists in delivering devices to students from public schools, in 5th grade. The students bring their tablets home every night.

- The first stage of the program, school year of 2013 – 2014, consisted in deploying 240,000 laptops in three states.
- For the previous school year, 2014 – 2015, the program delivers 710,000 tablets in 6 states; also in the classrooms themselves it was installed a projector, router and a server (local network).



- For the present school year, 2015 – 2016, the program delivers a million of devices in 15 states.

For 2018, the program will deliver 5 million devices in each of the 32 states of the country.

Even after it was launched the Digital Inclusion and Literacy Program, at the National Digital Strategy Office, we recognized that there are many opportunities to improve and maximize the impact of technology in education.

PILOT PROGRAM DESCRIPTION:

For that reason, we have been designing and implementing Pilot Programs since 2013 until now.

The First Pilot, school year of 2013 – 2014, began by bringing together various stakeholders in the IT industry and education to present solutions that would take into account the digital ecosystem (infrastructure, training and teacher's support, digital content, monitoring and evaluation) necessary for effective implementation of tablets in selected public schools of three Mexican states. The tablets and supporting ecosystem were donated by various industry participants without cost to the Government and then were given to students and teachers in 5th grades.

The Pilot had two main objectives:

1. The generation of indicators and models that contributes to the digital inclusion and literacy public policy.
2. The development of digital capabilities (based on UNESCO ICT Competency Framework for Teachers) to promote:
 - Collaboration
 - Critical thinking
 - Communication skills,
 - Self-management, etc.

Therefore, the purpose of the Pilot Program was to establish initial questions and explore practical issues to find out the best solutions for the unique country environment of Mexico. For instance, one of the initial questions was related to the screen size of the tablet? 7 inches, 10 inches? We also had questions related to the type of training and support that encourages teachers to use the devices in their classrooms? How many hours of training? What type of content would be helpful for the teachers?

As stated above, collaboration has been the bedrock on which our Pilot has been built. In particular, the Pilot has brought together the Ministry of Education and the National Digital Strategy Office on the government side with various representatives of the IT industry (both those who provide hardware and those who supply content), as well as non-governmental organizations and various international organizations. Each of these sectors has provided important insights and contributions during the Pilot.



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To monitor and evaluate the program, we assembled a “Monitoring Committee”, composed mainly of officials of NGOs and government agencies. In order to analyze the effectiveness and validity of the Pilot, we collected data from diverse sources.

- Questionnaires for principals, teachers, students and parents to identify the school conditions, their experiences, infrastructure, reporting of issues, etc.
- Pre-test and post-test evaluations by teachers and students helped to define a baseline and to examine the impact of the technology. These instruments monitor the development of digital competences, so as to determine the strategies to follow in training and support for teachers. The instrument for measuring digital skills is a standardized test that was designed and validated for the Pilot. It was based on UNESCO standards: Managing Information, Collaboration, Critical Thinking, Communication, Collaboration, Digital Citizenship and Self-Management.
- Publishing more than 8,500 pieces of learning evidence generated by students and teachers during the pilot that served to identify best practices and areas of opportunity in training.
- In addition to focus groups, a monitoring platform was designed for the program to track (on-line) what happened at each school. The platform consolidates all information (i.e. reports, instrument of evaluation, questionnaires, evidence of learning, etc.)

The Office of the National Digital Strategy is an office created in 2013 by the mandate of the president of Mexico Enrique Peña Nieto.

The objective of the National Digital Strategy is to improve the use of technology towards the development of our country. In particular, the office is responsible for work with different sectors to

- Have universal access to connectivity
- Have Digital inclusion
- And growing the use of technology in different sectors, such as health, education, economy, security, and government itself.

To achieve these goals, we work closely with all national and local agencies as well as different partners throughout the world.

Results

The Pilot Digital Inclusion Program of the Office of National Digital Strategy has had a great impact on the incorporation of ICT education in Mexico. At the end, the result of the Pilot has been to develop a new, comprehensive technology ecosystem in the classrooms of the country, for the benefit of education in Mexico, and, most importantly, children who will build the Mexico of the future.

Some of the main results are:



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- The Pilot has led to creation of a decentralized agency, which make uniform the objectives of all education technology programs and which will consider all the ecosystem measures in the Pilot.
- The Pilot led to the creation of a Committee coordinating the efforts of all Government agencies with projects contributing to the ICT program (connectivity, content, etc.).
- The Pilot provided information regarding tablets that could be used in the broader devices 1:1 program by identifying the characteristics of the devices for the second installment (almost 710,000 tablets), held in School Year 2014-2015.
- The Pilot resulted in the saving of considerable resources in the provision of devices (aprox. \$88 (USD) per device). Savings thus derived can be re-focused on training and support for teachers consistent with UNESCO standards (as was found to be effective in the Pilot Program)
- Lessons learned from the Pilot were shared in the First Forum on Digital Inclusion, which divided participants into working groups devoted to each of the essential parts of the Pilot ecosystem.
- The Pilot brought together prior efforts of NGOs, government agencies, International Organizations, etc.
- The Pilot helped to align other important programs, such as connectivity and public places electrification, with the broader Inclusion and Literacy Digital Program.

The Pilot has led to the development of a platform that will allow us to gather and review diverse content for use in ICT in the classrooms.

With the data generated from the monitoring platform and the instruments, we generated two main evaluations directed by experts from the Inter – American Development Bank.

Development

- The First Part of the Pilot Program was from January, 2013 to July, 2014.
- The Second Part was from August, 2014 to July, 2015.

During all the months of the Pilot Program implementation we have been in touch with the Ministry of Education which is responsible of the operation of the Federal Program of tables delivering.

Design: In asking ourselves how to reach these goals, we looked at best practices from around the world and found out the key factors that lead to successful programs.

For the donation, the Ministry of Education posted in its Site the alignments to participate in the Pilot Program. The document was designed after the review of the best practices mentioned above.
<http://bit.ly/1NGrYer>

We design two monitoring “instruments”, that we called pretest & posttest for teachers and students.



Also, we designed what we called a portfolio of evidence. The portfolio helps us to know what is the instrument that teachers use the most, in which subject (science, math, history?), etc.

And we created a monitoring platform. This tool helped us not only to track each school, each teacher, each student's activity, but also it provided information, in real time, of what was happening (for example, when we saw less activity in one of the schools, we called the director and we found out that something happened: they lost connectivity, the teacher was sick, etc.) we also use the data to redirect teacher support (when we observed that the teacher was using only one productivity tool we encouraged that teacher to use other tools, etc.).

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Testing: We also looked for the support of experts on the field (civil society, academy, policy makers, etc.) And we created an advisory group to help us to design and direct the pilot.

Also, before implementing the instruments to measure the Pilot Program (pretest and posttest) we calibrate those in a chosen school called Christel House.

To test the Pilot, we design two monitoring "instruments", that we called pretest & posttest for teachers and students.

- The pretest was a base line to have an idea of where we started and the posttest was a follow up.
- This instrument was validated and calibrated by UNESCO and it was tested in a school before its implementation.
- The instruments were designed to be solved in the tablet, so we have the results immediately on the platform (even in the case without connectivity we were able to apply the exam)

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It's relevant to mention that the data generated, with the use of the devices, was used to generate a more serious report (since all data interoperates) - that result also was compiled at a lower cost than collecting information from surveys.

Implementation: The implementation was in 58 schools in three states and almost 5,000 students. We selected schools with different conditions (urban, rural, small and large sizes, etc.). The main launch was in Guanajuato. More than 800 students, people from the industry, civil society, local and federal authorities attended to the event.

To run the Pilot Programs, we have been aligning differing points of views and approaches among government, non-governmental, and industry participants. (The success of the Pilot depended on aligning the views of those involved in the pilot, without losing the creativity and insights of each).

We also train teachers in digital capabilities to promote:

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- Critical thinking
- Communication skills
- Self-management, etc.

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Resources: Donations from the Industry (i.e. tablets, connectivity, teachers training, etc.). Technical Cooperation from the Inter – American Development Bank

Diffusion and scaling: We have been participation in different events (invited mainly by international organizations who wanted to learn about our experience).

The practice has expanded to the Ministry of Education which is implementing the National Program. Also the Pilot has led to creation of a **decentralized agency**, which make uniform the objectives of all education technology programs and which will consider all the ecosystem measures in the Pilot.

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Partnerships: Private Sector, Civil Society, Academics and Research Bodies and Public Sector Organisations.

Partners:

Industry – Intel, Google, Cisco, BrainPop, Khan Academy, Inteltech, Comprende MX, Promethean, Microsoft, Declara, Cursame, Northcast, CEPRA, HP, Gal&Leo, Alumnos en Red, Eural, etc.

Civil Society – Fundación Alejo Peralta, Fundación México Educado, UNETE, Fundación Televisa, Suma por la Educación, SOMECE, etc.



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Academics and Research Bodies – UNAM, ITAM, ITESM, etc.

Public Sector Organizations – Ministry of Education.

International Organizations – IADB, World Bank, AOS, etc.

Nature of the partnership:

Industry – Donations

Civil Society – Technical Advice

Academics and Research Bodies – Technical Advice

Public Sector Organizations – Schools

International Organizations – Funds for implementing the Pilot Program

Lessons learned

After tracking different models, we found out that these types of programs are more intensive and encompassing than merely passing out devices, and that if we wanted to maximize the benefit of technology in education, we needed to consider a whole “ecosystem” and made the programs with the support of other sectors.

Conditions required:

- Teacher’s training and teacher’s support are necessary for the use and
- Developing a mechanism to monitor (in real time) those schools without connectivity.

Additional information:

Projects in which one device is provided per student have had ambiguous results in the past. No country has been able to develop an all-encompassing blueprint to use technology to impact education. Our coordinated group of the Government, NGOs and the industry, is continuing to monitor and to consider the full ecosystem, so that we can assess needs beyond mere device deployment for an effective program.

New instruments to measure the impact of ICT in education. The instruments are based on the ICT UNESCO standards. <http://bit.ly/1ATcLBd>