CASE STUDY
Intel® Learning Series
Nicaragua

Connected Schools Foster Digital Inclusion in Nicaragua

Intel® Learning Series (Intel® LS) is part of the pioneering effort in Nicaragua to integrate information and communications technology (ICT) into schools. Transforming education and empowering underprivileged groups, this project’s emerging success serves as a model for other nations with developing economies.

Connecting Communities through Technology in Schools

Because remote schools in Nicaragua often serve as community centers, the 2010 pilot program provided vital communication hubs for whole villages, in addition to transformative resources for education.

- **ICT access** for five schools and 2,923 community members, including 921 students and 98 teachers
- **Infrastructure**, including electricity and Internet access
- **Community training** and teacher professional development that optimize the value of the technology
- **Economic and social development** for the global information economy

Like many countries, Nicaragua faces significant challenges in offering a quality education to all its citizens. In many rural areas, infrastructure and technology that are taken for granted by much of the world’s population are insufficient or nonexistent. Remote communities are isolated by the practical realities of economics and geography.

Intel LS has unique expertise in meeting challenges such as these to transform education, helping forge public-private alliances, secure funding, and provide total eLearning solutions that include planning, hardware, software, and locally sourced educational content and services.

In Nicaragua, Intel LS is participating in the transformation of the educational system as part of the Connect a School, Connect a Community initiative being conducted by the International Telecommunication Union (ITU) and the Nicaraguan Institute of Telecommunications and Mail (Telcor).

“The community participation and support allowed this project to be successful. In some places, the project team had to use a helicopter, SUV vehicles, and even carts pulled by oxen to transport the material. They had to cross rivers and climb steep hills due to torrential rains, but these efforts were worth it.”

- Claudia Gómez Costa, ITU expert
A Public-Private Coalition to Transform Education

The government of Nicaragua's comprehensive program for implementing technology in education traces its roots to an objective set by leaders from around the world at the World Summit on the Information Society: to connect the world's primary, secondary, and higher-education schools with ICT access by 2015. Extending this ambitious goal to the 8,154 public schools in Nicaragua led to a national plan for connectivity to schools.

A study of policies and regulations in the telecommunications sector was carried out to facilitate access to the Internet. That analysis shed important light on the challenges and opportunities associated with extending connectivity to schools during the planning stages of the project. Based on these findings, the team made up of Intel LS and other public and private entities recommended the strategic phased approach currently underway.

Full implementation of the pilot project began in August, 2010 and was completed by December of the same year. While the initial plan was to connect two schools, careful management of resources and an additional mobilization of funds enabled ITU and Telcor to include three additional schools in the project.

In that brief timeframe, the pioneering effort provided computers, electricity, and Internet access to children from five schools in remote locations—resources that also represent the opportunity for economic and social development in the schools' communities. These successes are even more remarkable for the logistical challenges of access to the remote schools, which were addressed by transportation modes as diverse as helicopters, SUVs, and even oxcarts.

Each of the five schools in the pilot received 20 computers, including eight Intel classmate PCs donated by Intel LS, as well as Internet connectivity donated by Nicaraguan provider Enitel. The use of several connectivity technologies in the pilot provided insights that will contribute to choices made for future deployments.

<table>
<thead>
<tr>
<th>School</th>
<th>Connectivity Technology</th>
<th>Community</th>
<th>Municipality</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fidel González</td>
<td>Wireless, point-to-multipoint</td>
<td>Cárdenas</td>
<td>Cárdenas</td>
<td>934</td>
</tr>
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<td>Pedro Joaquín Chamorro</td>
<td>3G</td>
<td>El Genízaro</td>
<td>San Juan del Sur</td>
<td>339</td>
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<td>Pansuaca</td>
<td>Tola</td>
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<tr>
<td>Andrés Castro</td>
<td>Satellite</td>
<td>Tichana</td>
<td>Altgracia</td>
<td>368</td>
</tr>
</tbody>
</table>

“I am very pleased for the success of this project in Nicaragua, because it is an example of what can be achieved when the ITU and the member countries work together to connect schools. We are supporting ITU member countries in different nations to develop national plans for connectivity in schools, model schools, and ICT community centers in schools.”

- Brahima Sanou, Director of the ITU Telecommunication Development Bureau

“The project has taught us lessons such as the possibility of using different technologies for urban and rural areas in future projects and the need to decentralize technical and pedagogical assistance to the local communities and the obligation of public sector institutions to work together based on common objectives. We have a Department of Education that will take advantage of ICTs to improve education and a dedicated regulator that will ensure everyone has access to ICTs.”

- José Pablo de la Roca, Director of Planning and Development, TELCOR
Immediate Benefits to Schools and Communities

Even as the availability of ICT within schools helps create the foundations for future economic well-being among students, it creates near-term positive impacts.

- **Expanded access to information.** Better resources for research on school subjects and community distribution of information and knowledge, as well as the potential for e-commerce.

- **Renewed student engagement.** Heightened interest in school helps provide motivation for better attendance and promote long-term retention rates.

- **Improved teaching resources.** Teachers have better access to school planning assets, curriculum materials, and research opportunities.

- **Administrative support.** Enhanced collaboration between local administrators and the central Ministry of Education helps standardize curriculum and ensure quality.

Because many of the infrastructural resources implemented by the pilot can be made available to teachers, students, and other residents of neighboring communities, the shared benefits are increased even further. The immediate success of this pilot program makes it evident that the project in Nicaragua can serve as a model for other developing countries.

This project has also enabled a way to connect schools at the national level and to identify several major challenges such as funding, the need to strengthen partnerships between the public and private sectors, cultural change in the use of technology, and the importance of developing human capacities within each community.

As in many countries worldwide, Nicaragua faces the challenge of being able to offer its children a quality education. Intel LS is dedicated to providing eLearning solutions and resources that are helping to address that challenge and to prepare the leaders of tomorrow for economic and social success.

"The Intel® classmate PC greatly improves my work in teaching. I have been able to develop my lesson plans, and at the same time it gives me greater confidence when I prepare for subjects such as mathematics and natural sciences."

- Jhony Saul, teacher at the Fidel Gonzalez Vazquez School in Cárdenas
A Reachable Vision of the Future

What is your vision for the future? Please contact your local Intel representative to discuss how to deploy a sustainable education program based on technology in your country.

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