

Locally Relevant Learning Materials for Rural Schools through Digital Offline Libraries



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In order to tackle the lack of locally relevant content and improve the quality of education in rural areas of Peru, IICD has designed an integrated solution that turns largely unused laptops into digital offline libraries. Student reading performance in Peru ranked last in the 2012 OECD PISA test, and rural education suffers considerably more from a lack of culturally and linguistically contextualised learning materials and expertise. These digital offline libraries contain user-generated content in local languages and reflect the culture of Peru's indigenous communities.

For the last 17 years, IICD has been using existing ICT in innovative ways to solve day-to-day problems faced by local communities. Although nearly five million Peruvians speak Quechua, Peru's national curriculum is still mostly in Spanish. Spanish-speaking Peruvians are seven times more likely to achieve satisfactory scores on literacy and numeracy tests than Quechua speakers[i]. The situation is much worse in disconnected

rural schools. Peru's most remote areas in the Andes suffer from poor infrastructure, a serious shortage of qualified teachers, lack of Internet connectivity and lack of relevant educational material.

As part of an effort to improve Peruvian education in general, the One Laptop per Child programme (OLPC) has already provided eight hundred thousand XO laptops for educational use, but due to lack of training and (Internet) connectivity, these laptops have gone largely unused. With suited pedagogical approaches and access to the right kinds of learning materials and expertise, these computers can be powerful tools for education. They offer students access to stimulating materials, like videos in their own language, and allow teachers to offer and create culturally relevant content and examples. The availability of educational material contextualised to indigenous cultures and traditional knowledge not only increases the development of students' literacy skills but also aids in the preservation of local identities.

Building on local talent to add value through ICT solutions

Eighty percent of rural schools in Peru have no Internet access, which is one of the reasons IICD has focused on making relevant educational materials available offline since 2011. For this purpose, IICD's technical advisers in Peru, Enrique Mayorga and Frederick Paucara, used an application of the Raspberry Pi to set up an offline library containing educational resources in Quechua. These offline digital libraries are made for use with the existing XO laptops, already available in Peru's rural schools.

The Raspberry Pi, a credit card-sized computer that stores information and content, functions as a local server that can be used to download educational content over Wi-Fi and access it on the XO laptops. Teachers were then trained to use the XO laptops and access content from the local Raspberry Pi file server through their browsers, just as if they were using Internet. In this way, teachers can access stored documents, generate their own lesson materials and use them in the classroom with their students. As a result of this intervention, local teachers and schools can decide how best to adapt the curriculum to their students' needs. With IICD's capacity building support, teachers now directly train the students to use the XO laptops to access educational materials.

Rolling out ICT solutions across and beyond the Andean region

The project, implemented by local partner CESIP, is currently serving 20 schools and has already reported improvements in cognitive skills of students using the laptops.^[ii] The solution will be soon rolled out to over 200 schools in the Cusco, Huancavelica and Junin regions in Peru, where IICD also implements its ICT4Education programme. On-the-job training sessions have taken place in June 2014 and the project has already generated attention and interest in Bolivia, where IICD, invited by the Ministry of Education, will present the solution during the international event Educa Innova.

IICD was recently interviewed by Peruvian television programme Umbrales during Virtual Educa 2014, an international event about innovation in education with focus on social inclusion and sustainable development. (video: courtesy of Umbrales/TV Peru)

[i] http://unesco.nl/sites/default/files/dossier/gmr_2013-4.pdf?download=1, pg. 19

[ii] <http://www.iadb.org/>