



CELE Exchange, Centre for Effective Learning Environments  
2010/11

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<https://dx.doi.org/10.1787/5km4g24s2gf8-en>

# Alternative Education Spaces in Mexico

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*This article explores the architecture of the Red de Innovación y Aprendizaje (RIA), a network of education centres located in underprivileged communities in Mexico.*

The Red de Innovación y Aprendizaje (RIA), or Learning and Innovation Network, is a group of education centres that provide access to computers, the Internet and quality education to low-income communities in Mexico. The RIA began in May 2009 when ten pilot centres were opened in four municipalities in the State of Mexico. Just over a year later, nearly 60 000 users had registered at the centres. Due to its success as an alternative education model, the RIA will expand its network with 32 new centres by the end of 2010. The project aims to reach some 230 000 users by 2012.

Designed by Ludens, a Mexico City-based architecture firm, the centres provide an environment conducive to learning through spaces that are sustainable, comfortable, secure and strategically located. Low-impact materials and a modular, minimal design fashion the spaces. Architectural elements respond to the immediate surroundings to create a comfortable and safe learning environment. In order to maximize the impact of the RIA, the sites are chosen through in-depth urban studies. These have the effect of applying “urban acupuncture” to the areas where education is most needed.

## PROJECT OVERVIEW

The RIA offers courses to people of all ages: basic computer and Internet skills, OpenOffice, English, finding work through the Internet, reading and math for children as well as business tools for micro entrepreneurs. RIA users can also prepare high school, bachelor’s and master’s degrees through the Institute of Online Education. All classes are small, catering to 10 to 16 students so that users have considerable one-to-one time with facilitators. RIA users can also engage in autonomous e-learning courses with programmes while under the supervision of a facilitator.

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The reception areas are functional and welcoming: RIA centre at Naucalpan 1

The centres are comfortable and environmentally sustainable. Each centre contains on average two to four classrooms equipped with computers, a multi-purpose classroom for exhibitions and workshops and a stationary store. Most have auditoriums for film screenings where local businesses, community groups and government bodies can hold meetings and seminars. The more spacious centres have large reception areas with tables and benches as well as brightly coloured cubes that can be stacked and arranged in various configurations to create comfortable seating. All the facades have common elements such as galvanized steel, the RIA logo and details about courses.

## SUSTAINABILITY: SPACES AS TOOLS FOR EDUCATION

Recycled and recyclable materials are an essential part of RIA architecture and furnishings. The registration desks, seating in the reception areas and many of the classroom doors and walls are made from oriented strand board (OSB) comprised of leftover wood chips from construction sites, a material typically used to create placeholder walls while buildings are under construction. The polycarbonate material used for the rest of the walls is traditionally employed to make temporary windows at construction sites while the wood beams that serve to reinforce the central walls are typically used to create scaffolding. Chairs are made from recycled plastic to accommodate heavy usage, and the spaces are lit with energy-saving light bulbs.

The skeleton of the architecture is left apparent so that visitors understand how the centres are built, making each site a source of inspiration on the use of low-impact materials. Recycled and recyclable materials that normally serve a transitory purpose and are considered cheap and undesirable, such as OSB, polycarbonate walls and pine beams, are treated as finishing materials, creating a space that speaks about sustainable practices while also being cost-effective. Leaving raw materials uncovered makes for a simple, quick method of construction that allows the centres to be completed on time and within budget.

The interior elements of the centres are designed to be transposable. The registration desks and the interior walls are built according to a modular design that allows them to be easily moved, opened and closed or disassembled when changing the configuration of a centre, while the floors are made from durable rubber that can be removed and reused. This ensures that if a centre closes or changes location the materials can be transferred and adapted to a different site. Moreover, in order to minimise waste, the dimensions of the modules are based on the materials' industrial measurements; this way, little to no material goes unused.



A typical classroom

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## CREATING SPACES CONDUCIVE TO LEARNING

The polycarbonate plastic used for many of the classroom walls, which end a few feet below the ceilings, is semi-transparent, allowing light to penetrate the space. Outlines of the shapes inside the classrooms – students, teachers and equipment – are visible, creating an atmosphere of openness and transparency that reflects the “inter-connected virtual world that we now live in”.<sup>1</sup> These are non-restrictive spaces that compliment the contemporary blended learning model utilised at the RIA (simultaneous face-to-face and online interactions), demonstrating qualities found in the “technology enhanced learning environments”, or TEAL spaces.<sup>1</sup>



Transparent partitioning gives a sense of openness

Learning how to use new technologies for the first time can be an intimidating and frustrating experience, and RIA architecture attempts to counteract this through the creation of a space that is comfortable and navigable. Carefully selected colours highlight doors and floors to guide users through the centres, and different types of classrooms are represented by specific colours: free-access classrooms have purple finishings, multifunctional classrooms have red and classrooms designated for specific courses have blue.

The centres’ architects conduct a critical analysis of the architecture surrounding the centres in order to generate a pallet of colours and forms that are familiar to RIA users. The modular registration desks, stationary stores and cafeteria stations – the centres’ points of sale – resemble vendors’ stands found in local street markets, which are an integral part of the local culture and lifestyle. The bright red, yellow, pink, blue and green tones found on the floors and doors evoke the colours of the neighbouring shop signs and facades. While the RIA centres stand out in the local urban landscape, the subtle mix of familiar aesthetic elements helps them connect with the surrounding communities.

1. Fisher, Kenn (2010), “Technology-Enabled Active Learning Environments: An Appraisal”, *CELE Exchange*, July, [www.oecd.org/dataoecd/57/44/45640214.pdf](http://www.oecd.org/dataoecd/57/44/45640214.pdf), accessed 20 September 2010.



Colour coding enhances the navigability of the space

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Safety is also an important design element of RIA centres. The flooring in the hallways and reception areas has thick neon yellow stripes, generating a clear path that can be followed to find the quickest exit in case of an emergency, and the OSB walls are coated with a fire-repellent and varnish. Because the centres are located in dangerous, low-income urban areas, galvanized steel is used for the facades in order to reinforce the security of the centre and protect both the users and the equipment.



A modular reception desk

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A local street vendor's stand

© Ludens 2009

The properties of the galvanized steel naturally prevent graffiti from sticking to the surface. Because RIA centres are located in low-income areas with high crime rates, it is important that they have a well-maintained façade as this sends a positive signal to the community. Just as a broken window can spark the deterioration of a community, a façade that reflects safety, cleanliness and care can kindle the regeneration of a community by encouraging respect for local establishments and public spaces and discouraging vandalism. In this way, the centres become a positive influence on the community and a refuge for local residents who face crime, violence and detrimental living conditions on a daily basis.

Attention to upkeep and cleanliness is also an important part of the centres' interiors since for most businesses, community centres and schools in these areas this is scarcely a priority. The RIA centres are cleaned on a daily basis, and the simply designed facilitates get regular upkeep. Recycling is not common in the areas where RIA centres are located, so every centre has separate bins for different types of waste; users are taught how to recycle and separate inorganic and organic waste.

## CHOOSING A SITE

Before any decisions were taken, in-depth urban studies were conducted in order to determine where RIA centres could have the most social impact. The first stage of the studies consisted of evaluating the State of Mexico and its 125 municipalities with regard to population density, economic level, educational attainment, the ratio of schools to population density, the number of existing computer centres and the average number of computers per household. It is important to bear in mind that the RIA's target population earns an average of MXN 3 600 per month for a family of four, *i.e.* approximately USD 282.

The second stage of the study consisted of a detailed survey of the selected municipalities. This time the same criteria were evaluated on a local level, complimented by a topographical review of the municipalities to determine where exactly to place the centres. This included a review of the location of major city centres, green spaces, businesses, local industries, public schools, roadways and highways, public transportation systems, commercial areas and potential health hazards. The goal of this research was to locate RIA centres in areas that are easily accessible by foot and public transport. Ultimately, in each targeted municipality, the RIA aims to have a network of centres sufficiently dense that each one serves the community living within a radius of one kilometre, meaning that a person only has to walk this distance in any direction to reach a RIA centre.

The method used to locate the centres equates to "urban acupuncture": by placing centres in "pressure points" in urban areas, this creates positive local effects that spread to adjacent areas. This holistic approach to the problems of the city as a whole allows the RIA to have a lasting and deep impact on people's quality of life. This type of urban intervention constitutes a growing network of centres through which the RIA initiates small-scale positive social change, as opposed to attempting to make an impact through a single, large-scale action.

All RIA centres are renovations of pre-existing buildings (abandoned warehouses, hardware stores, clothes shops), which further reinforce tactical placement. By carefully positioning the RIA network, each centre acts as a community hub that brings together individuals, schools, businesses and local governments. The RIA enters into partnerships with local schools and offers educational courses that supplement these schools' curricula, and businesses and local governments host conferences in RIA auditoriums and train their employees through RIA courses.



A typical façade: Toluca 2

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An assessment of the first ten RIA centres revealed both successes and areas where there is room for improvement. One of our centres in Naucalpan is located above street level, accessible only by a long staircase. While the centre is now doing well, it took time to attract users, and it is still one of the less-frequented centres. User feedback revealed that people do not trust spaces that they have to climb up to; moreover, advertising the centre is difficult since the façade is not visible from the street.

Changes to various elements will be made and applied to the 32 new centres which will open within the coming months: the registration modules will be more spacious and open and the reception areas will contain more seating so that people can comfortably spend time there. In addition, the first group of centres demonstrated the need for more ways to display information on services, courses and other types of announcements, so the new centres will incorporate elements like light boxes for posters on the outside of the centres and chalkboards in the reception areas.

Overall the concept of the design has been highly successful. Users report enjoying the spaces, facilitators feel comfortable teaching and local community bodies have been drawn into the centres. But the best testimony to the success of this venture is the immense popular demand it has generated. The RIA still faces challenges, but the results are more than encouraging.

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ISSN: 2072-7925

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