



## Case Study

Intel-powered classmate PC

# In Puebla, Mexico, the classmate PC makes it possible for children to receive better education

## Introduction

To effectively move towards becoming a knowledge-based society, a nation's students must have access to quality education. Information and technology must work hand in hand to provide them with solutions adequate to their specific needs in this regard.

Mexico, with its more than 100 million inhabitants, has the largest Spanish speaking population in the world. According to figures from the World Bank, approximately 40% live in poverty and 18% live in extreme poverty, earning less than one dollar a day. Nevertheless, Mexico has the 14th largest economy worldwide and is second in Latin America.

In order to improve these conditions and boost a developing economy, steps need to be taken in order to let children, the workers of the future, be more competitive in this ever changing climate.

## The Case of Benito Juarez Primary School

October 2007, Puebla, Mexico.

On a particular Monday morning, as the doors opened wide at Benito Juarez school, children were, for a change, eager to go back to school: this was the day the school was equipped with 50 classmate PCs and a laptop for each teacher. Along with the classmate PCs, the school was fitted with Internet capabilities through Telmex's Prodigy Infinitum\*.

Benito Juarez Primary School is located in a low to medium socio-economic level neighborhood. Many of the students' parents are blue collar workers or self employed, such as: taxi-drivers, mechanics, store attendants, etc. Half the mothers work outside of their homes.

The Center of Educational Technology (CETE), part of the Public Education Secretariat (SEP), ran an evaluation based on an impact study. They determined that Benito Juarez Primary School was ready to use the classmate PC as an education enhancement technology tool with the teaching methodology proposed by the Intel® Teach Program\*\*. The Intel Teach methodology is based on developing critical thinking, problem solving and team collaboration skills; better known as 21st Century job skills.

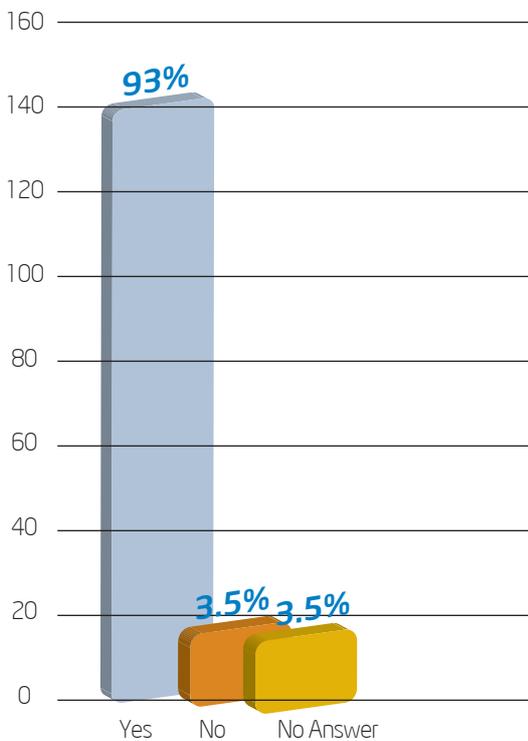
The Intel-powered classmate PC is a computer specifically designed to address the needs of modern education and is a powerful tool to support both the learning and teaching processes. It is ultra-compact, easy to carry and include built-in wireless connectivity. This child-friendly device stands up to rugged conditions, so students can feel confident with its durability. Furthermore, it features enough memory and storage to run real-world applications.

Here, at Benito Juarez Primary School, the classmate PC has become an instant success.

Before the arrival of the classmate PC, the school had only five desktop computers. The computers were shared and could only be used occasionally by the students. Now, children have their own classmate PCs, which they use twice a week.

*"Today is different; previously, the teacher spoke about a subject in class and you had to imagine things. But now, with the classmate PC, you can see what it's all about. You see clearly what they are explaining and if you have any doubts you can find more information than that provided by the teacher,"* says Ernesto Ivan Tzompanzi, a sixth grade student. The results of the impact of the classmate PC in the classroom are clear. In a survey carried out by the Tecnológico de Monterrey\*\*\* with the participation of 151 students from the school, it was found that most of the students consider that using the classmate PC helps them better understand their subject matter, get more out of their education and improve their grades.





Do you think that computers help you to learn at school?  
 Source: Tecnológico de Monterrey survey\*\*\*



Another major change has been the transition between a traditional model of direct instruction and a model that is student centered. With the classmate PC the students are taught to investigate on their own to prove their hypotheses, to go deeper into the topic they are interested in and, above all, to generate and acquire new knowledge.

According to the conclusions reached by the Tecnológico de Monterrey survey\*\*\*, relating content that is taught in the class to their everyday lives, helps children maintain interest, motivation, attention, discipline and self-esteem by using the classmate PC in the classroom.

Student interactions have increased with the use of the classmate PC as the student is no longer isolated, but instead involved in online team work and collaboration. It is not only about the student getting rich information, but also about how they learn to generate "knowledge in community" through their acceptance of others as partners in their community's everyday life and, most importantly, helping them recognize themselves as valuable, useful individuals. Children learn to work as a team and this is reflected also at home, interacting with their families.

Mrs. Maria Elena Hernandez's daughter, Aline, has a learning disability. She speaks of her fourth grade daughter's experience with the classmate PC: "When she touches the computer, she feels free; is able to express what she is feeling. It helps her say 'I can' and she has proven that to me. Now she can do many things that I had restricted for her in the past."

The general opinion children at Benito Juarez school have about using the classmate PC is: "I can investigate, I can solve problems, I can work as a team, and I can learn more". "I can" is also something the teachers say. Their age ranges between 40 and 55 years, and they have some 25 years of teaching experience on average, based on traditional didactic methodology. Many of them have never had contact with a computer, but the classmate PC has encouraged them to change their way of teaching. The main challenge was the transition from blackboard-and-chalk teachers to digital teachers. This transition is still on course.

According to Miriam Guardado Rivera, representative of the CETE:

*"Enrollment in public schools increased significantly with the technology change. Many students abandoned private school because the one next door, a public school, had computers".*

She says the next challenge is to convince decision makers:

*"People managing public resources... convince them that this can make education change the children, make people believe this is true".*

This would help reach another goal: decrease school dropout rate, prevent school absenteeism and keep children interested in learning. It's important, too, that students see school as an option to develop their potential.

*"The classmate PC allows us to face new challenges and get us prepared for technology, not to bypass our capabilities, but to align ourselves and become capable of holding this special position we have in education. We know there are many barriers, but we won't take them as obstacles, but as challenges to overcome",* concludes Luz Maria Margarita Rosas Alvarado, the school's principal.



***"The magic is not in the classmate PC,  
the magic resides in its teachers and students"***

Juan Jose Lechuga - Training Manager, Technology Center



**With the classmate PC, children in Puebla, Mexico say "I can";  
Can you too?**

## About Mexico

- The percentage of people older than 15, in 2005, who could not read or write was 8.4%, according to data from the National Institute of Geography, Statistics and Informatics.
- The investment in education in 2008 will be more than 165 billion pesos, while the investment in basic education will surpass 30 billion Mexican pesos.
- The life expectancy of the Mexican population is 75.6 years in average.
- Economic activity in Mexico depends largely on its commercial transactions with the United States, concentrating in this country 85% of its exports. Another major source of income are money shipments from immigrants, which constitute the second largest source of income for the country after petroleum.



For more information on the Intel-powered classmate PC and the Intel® World Ahead Program, refer to the following resources:

[www.intel.com/go/worldahead](http://www.intel.com/go/worldahead) or [www.classmatepc.com](http://www.classmatepc.com)

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\*\* Programs of the Intel Teach Initiative are founded by the Intel Foundation and Intel Corporation.

\*\*\* Heredia Yolanda, Lozano Armando, "Using classmate PC computers in a primary school in Puebla: A descriptive survey", Instituto Tecnológico de Monterrey, Monterrey, Mexico, June 2008.

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