

# Classmate PCs Revolutionize Education in the State of Pernambuco



## Goals

- To use technology in schools as a means of improving student performance, motivation and interaction in the classroom;
- To guarantee that all students attending the last two years of high school in all State public schools of Pernambuco have access to a computer;
- To achieve an IDEB (Basic Education Development Index) of 4.5 for the state of Pernambuco by the year 2020;
- To align Education and Technology in order to transform the learning processes;
- To offer a cooperative and interactive atmosphere in order to fully develop 21<sup>st</sup> century skills;
- To promote community and students digital inclusion through the adoption of mobile technology with Internet connection for public school students.

## Solution

- Intel convertible classmate PC
- Implementation of the Connected Student project

## Numbers

- In its first year, 2012, 176 thousand Intel classmate computers were purchased and distributed to students attending the last two years of high school in public schools of the state of Pernambuco. The solution, manufactured in Brazil, uses 1.6 Ghz Intel® Atom™ Dual Core processors, 10.1" touchscreen, 2 GB of RAM memory, 32 GB of SSD storage space, camera, Wi-Fi and a combination of Intel software designed for education, management and security.

## Pioneering in digital inclusion

One of the main levers for the transformation of a society is education. This theory has been proven by the major world powers, which today reap the results of investments made in this area decades ago. As a result, these countries continue to conquer significant gains in economic, political and social development.

These benefits are often impossible to measure, since access to knowledge increases reasoning abilities, individual and collective perspectives, critical thinking and contributes to the nation's progress as a whole. Furthermore, anybody that benefits from high quality education has the power to become a concept multiplier, leading way towards dialogue and development.

Focusing on these future benefits, the state of Pernambuco became the first in Brazil to implement the Intel convertible classmate PC in order to enhance the knowledge and the performance of its students through the alignment of pedagogy and technology. These new resources, allied to the joint efforts of the Government, educators and family members, help to include youth into society, allowing young people to take part in the most important decisions taken in the country.



## Connected Student

The concretization of the concept came to be through the Connected Student project, initiated in July 2012, from which will benefit in all 176 thousand high school students by the end of its first year only. Fruit of an investment of R\$ 100 million, the project plans to distribute Intel convertible classmate PC computers to all students attending the last two years of high school in state public schools.

Today the classmate PC is fondly referred to as "tablet" by students and teachers, due to its convertible screen, allowing the transformation of the laptop into a tablet.

It has all the functionalities of a PC for the creation of content (keyboard, software and applications) as well as the flexibility and versatility of a tablet (portability and touchscreen), offering its users the best of two worlds.



"In this joint effort with Intel we are training teachers not only on how to use the tools, but also on the new methods that are already at work in other countries. Teachers make a major difference in the use of computers, and we are training them to use them better." - Ricardo Dantas, Pernambuco State Secretary of Education

The secretary of education of Pernambuco, Ricardo Dantas, remembers that the Connected Student project began to take shape in 2011, when Governor Eduardo Campos suggested the use of technology in schools as a means of improving the students' performance and stimulate interaction in the classroom. From there, the Secretary of Education researched for references on projects of the same kind being led around the world. The Connected Student program complements the "Connected Teacher" program, which distributed notebooks to all public school teachers.

One of the results of this study was the definition of the infrastructure that would sustain the program. The latter was thus based upon three pillars:

- Infrastructure - schools must be prepared with the necessary technological structure in order for the distribution of computers to give optimal results; this includes internet servers, wireless networks and the classmate PCs;
- Training - the entire school community was prepared to receive this technology, which represented a cultural change for teachers as well;
- Pedagogic project - school principals were convinced that the new technology should be included in their schools' educational processes.

The Secretary of Education's team visited positive experiences in a few countries and brought back ideas for the implementation of the tablet PCs in Pernambuco, based on these three pillars. The infrastructure covered the security aspect as well, allowing for the blockage of the equipment in case of theft.

## Results

Dantas points out that Intel had active participation in the process of defining the model and the equipment being distributed. "We have explored work previously done by Intel regarding software for the use in scientific laboratories (Biology, Physics, etc.) and we also have the educational content of Educandos, which our teachers were already familiar with and which is compatible with the entire curriculum," explains the secretary.



The Connected Student project, initiated in July 2012, will benefit in all 176 thousand high school students in its first stage. Fruit of an R\$ 100 million investment, the project plans to distribute Intel convertible classmate PC computers to all students attending the last two years of high school in state public school.

Following the schedule established when the program was created, the Secretary is already preparing the bidding for the purchase of new equipments. This process must be repeated annually, since, upon graduating from high school, students will receive definite possession over their equipments. "We will purchase every year, as we purchase school supplies. This is our job and its main objective is to enhance classroom dynamics," Dantas explains.

Results back up the Government of Pernambuco's expectations. According to Dantas, after only three months it is possible to notice the changes in the daily life of schools that have been making intensive use of the classmate PCs. For him, this is a process that cannot be reversed; it will insert the new equipment in students' daily life, change teachers' attitude and bring about a new dynamics, the results of which will become visible within the next few years.

All of this is part of a bigger purpose, which is to improve the state of Pernambuco's Basic Education Development Index (IDEB), which should reach 4.5

by 2020. "In this joint effort with Intel we are training teachers not only on how to use the tools, but also the on the new methods that are already at work in other countries."

### New processes

The training mentioned by Dantas has presented very fast results. For the English teacher Klenie Synara Ramos da Silva, the classmate PCs, together with their notebook, constitute a powerful teaching tool. She states that today, all her classes are presented through data show and that the classmate PCs have allowed for the constant use of interactive activities.

"We work on a certain topic and then we pass to an interactive activity in order to practice that topic. Students can then follow their scores in the activities they have just completed," says the teacher. She believes computers are becoming an important foothold for students to explore the world: "the equipment represents the students' insertion in a globalized world."



"Nowadays we continue to use books, and the tablets have appeared as a helpful tool for teaching purposes, since not everything can be found in books," says Antonio do Nascimento, high school student, classmate PC user and future applicant for Law School.

This opinion is shared by History teacher José Wilson Barros Falcão, for whom the use of the classmate PCs represents the visible part of an inclusion-based policy. "I see the tablet as a tool that can be appropriated by the school, by the teachers and by a public policy that innovates in its reading of the youth and of the world, bringing this new educational process to us today," he says.

Falcão admits that the adoption of the new equipment within the school occurred naturally, moved by the students' curiosity. "Leaving technology aside and thinking pedagogically, I need this curiosity for the students to mirror themselves in me." But this could not happen without a process of adaptation on the teachers' part, especially concerning the students' enchantment with the digital world.

"The first thing is to participate in that world. Not to surrender to it, but to have an understanding of the context, and the context is such that media and games have a very large influence on education. Enjoying playing is part of human nature and electronic games are much more present in society. The academy must understand that it is possible to use games to come up with alternatives and to work with education in a playful way," says the History teacher.

Going further, Falcão believes that the classmate PCs have the function of reconnecting knowledge within the school, since it allows for integration between different subjects. "The programs installed allow us to make this connection," he says, recognizing however that this is not an easy task. For him, it is necessary to reconstruct the teachers' profile so that he can advance along with the students. "This is what society demands, this is what students need. We must assume and make the best of these changes."

### New horizons

With better results and a more active participation from the teachers' part, the result is a wider horizon for the students, a reality that has already begun to be noticed by their parents. Lucas Martins da Silva, father of one of the students participating in the program, affirms that this was one of the best things that have happened in his daughter's life. Even more, he believes that she will have a brighter future thanks to the project.



"If you are a professional worker in a given field and you are given X instruments to work with, and all of a sudden you are given X more instruments, isn't it going to be better? It was the same thing. Now she has been given an instrument that she will already be familiar with once she reaches the job market. She will arrive there ready, knowing all about it. It was great and it will be excellent for her future. I never had access to this," he compares.

Antonio do Nascimento, high school student, classmate PC user and future applicant for Law School, believes that the initiative will help to educate more qualified students. "Nowadays we continue to use books, and the tablets have appeared as a helpful tool for teaching purposes, since not everything can be found in books," he says.

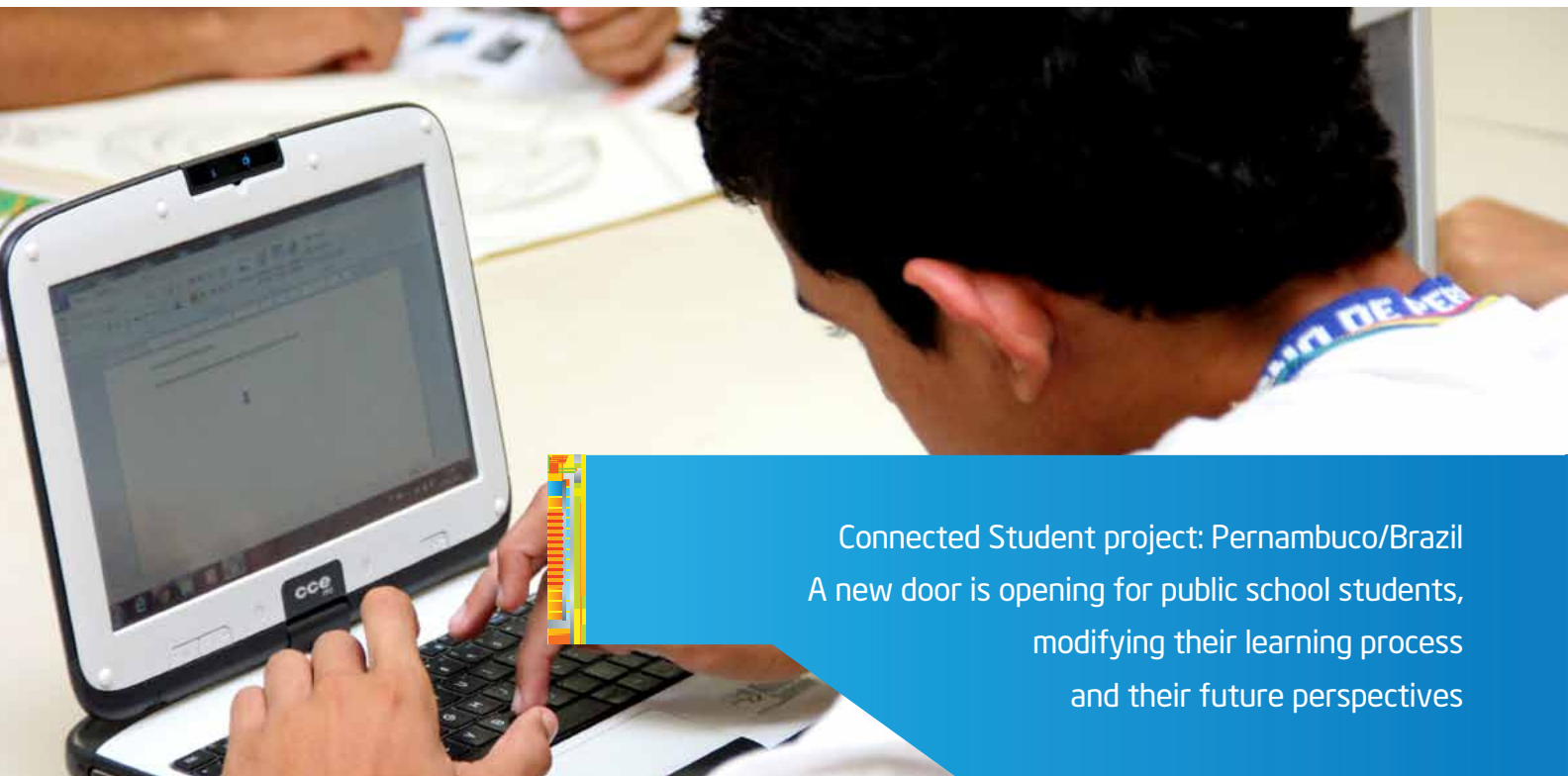
Another future candidate for Law School, Tiomas Augusto da Silva affirms that the classmate PC is helping him in many ways. "The advantage is that before I had no computer at home and now the tablet helps me do my activities, watch movies that have been recommended by the teachers, and to do exercises that improve our grades," he says.



For Lilian de Albuquerque Martins, the computers are an additional and more efficient research tool. "I study with books and notebooks, and with the tablet I can go further. I can find other classes, download new content and watch everything at home," she says. The innovation even increased her parents' participation in her scholarly life: today they follow her classes on the tablet PC. "My dad watches and afterwards we debate the content."

Lilian defines the classmate PC as a tool that helps her work, like a book or a notebook, as long as she knows how to use it. "I am preparing myself for the vestibular [university entrance exams]: it is very competitive, and more and more public school students are getting in. I study every Saturday, and today I feel capable of competing with private school students," she celebrates.

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- Lilian de Albuquerque Martins, high school student



Connected Student project: Pernambuco/Brazil  
A new door is opening for public school students,  
modifying their learning process  
and their future perspectives

