

## Case Study

Costa Rica

Intel® Teach Program

# The Intel® Teach Program Helps Costa Rican Educators Integrate Technology into Classroom Instruction

**In Costa Rica, the Intel® Teach Program is making teaching and learning more effective through the use of technology. The program has trained teachers on integrating technology in the classroom to promote 21st century learning such as digital literacy, problem solving, critical thinking, and collaboration. Teachers have seen significant improvement in student performance. The Costa Rican Ministry of Education has now incorporated the Intel Teach Program training curriculum as part of its mandatory professional development for all schoolteachers.**

The Intel Teach Program has extended to all corners of the country, reaching some of the most rural areas of Costa Rica.

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### Challenges

- Teachers and students have limited access to technology
- There is an absence of properly developed curriculum for integrating technology in classroom instruction
- There is a need for student-centered learning and outcome-driven educational approaches

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### Approach

- Use the Intel Teach Program to provide training in how, when, and where to incorporate technology tools and resources into lesson plans
- Expose teachers to new approaches for creating assessment tools and aligning lessons with educational learning goals and standards via the Intel Teach Program
- Build capacity by training teachers to train other teachers in the Intel Teach Program curriculum

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### Benefits

- Through the Intel Teach Program, to date, 30 percent of Costa Rica's K-12 educators are able to develop inquiry-based, technology-enriched projects that enhance student learning, and promote higher-order thinking and reasoning skills
  - Costa Rican teachers and students are able to use computers and the Internet as tools for research, creativity, and communication
  - Costa Rican teachers are able to align the Intel Teach Program curriculum to standards and use its assessment tools to monitor student progress
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When Julieta Rodriguez began teaching high school math some 30 years ago, technology in the classroom was the equivalent of an overhead projector and a set of colored markers. For many years, Rodriguez described herself as a fairly traditional teacher, relying primarily on a blackboard and chalk to teach lessons to her students. Since participating in the Intel® Teach Program, she has changed her approach to teaching.

Through the Intel Teach Program, Rodriguez learned from other teachers how, when, and where to incorporate technology tools and resources into lesson plans. She was exposed to new approaches for creating assessment tools and aligning lessons with educational learning goals and standards. Additionally, she discovered new ways to incorporate use of the Internet, Web page design, and student projects as vehicles for powerful learning.

Rodriguez is currently a teacher at Mario Quiros Technical High School, which is located in Tres Rios, in the province of Cartago, just 20 kilometers from San Jose's city center, and serves some of the area's most economically challenged families. Opportunity does not come easily for many of the school's 1,300 students.

The benefit to Rodriguez's students has been significant. Since her participation in the Intel Teach Program, student performance has soared. "The final promotion rate in math rose from 40 percent to 70 percent in the last two years," said Rodriguez. "This is huge and important for us."

Additionally, Rodriguez just opened a math lab in the school, the first of its kind in the country. The lab has created a great deal of excitement among students. Many are now competing in, and even winning, innovation competitions.

"No longer can I be classified as a 'traditional' teacher," Rodriguez said with a smile. Now she employs new methodologies and is more creative in her teaching approaches and uses a lot of tools, including project-based learning and the Internet, to make her classes more engaging. "The technology and the training

helped me to break a myth in the school, and now all the students think that math is fun and easy."

Rodriguez now trains other Costa Rican educators in the constructivist pedagogic approach promoted through the Intel Teach Program. As a result of the dramatic changes in Rodriguez's and her colleagues' teaching approaches, the high school's reputation has vastly improved, and families throughout the area are trying to get their children into Mario Quiros High School.

### **A Snapshot of Costa Rican Education**

Costa Rica's education landscape is diverse, with a mix of large urban schools and small rural schoolhouses. Of the country's approximately 5,000 schools, about half are urban schools with large crowded classrooms, and half are remote one- or two-room schoolhouses, where one or two teachers are serving a multiage, multigrade population.

Instruction throughout Costa Rica is still fairly traditional; teachers lecture from the front of the classroom and students take notes and exams on the information presented. The Ministry of Education does provide a national curriculum for teachers, though it is more of a guide of what subject matter and content is to be covered, rather than how it should be taught in the classroom.

Surveys taken in the country a few years ago showed that 74 percent of Costa Rican teachers had computers in their homes, but 80 percent of those said they did not know how to use them.<sup>1</sup> Of those teachers who reported having computer skills, many said they rarely integrated those skills into classroom instruction. Most reported having no access to computers in the classroom.

Over the past few years, technology access has greatly improved. Today, most of the larger urban schools do have computer labs, though access for students is still challenging because of the large number of students and the limited number of available computers. Often, the lab is equipped with approximately 20 computers, whereas class sizes alone are usually double that.

**"The final promotion rate in math rose from 40 percent to 70 percent in the last two years. This is huge and important for us. . . . The technology and the training helped me break a myth in the school, and now all the students think that math is fun and easy."**

Julieta Rodriguez  
Teacher, Costa Rica



The Costa Rican Ministry of Education recognizes the need to improve technology access for teachers and students, and to provide training for teachers to integrate technology effectively into classroom instruction. Though the country has had a national information technology (IT) curriculum focusing on programming skills and project-based learning in elementary school, the high school curriculum was focused more on learning software applications. Recently, however, the Ministry of Education equipped 60 rural high schools with mobile laboratories in an effort to promote a high school IT curriculum that integrates subject matter with project-based learning.

The Ministry of Education has now incorporated the Intel Teach Program training curriculum as part of Costa Rica's official professional development initiative for all school teachers, and is working with the 20 different education regions of the country to provide training for teachers in each district.

### **The Intel Teach Program Flourishes in Costa Rica**

Intel is committed to improving education to prepare students around the world to thrive in the global knowledge economy. To meet this goal, Intel's education efforts focus on improving teaching and learning through the effective use of technology, and advancing math, science, and engineering education and research.

One of Intel's most successful worldwide education programs is the Intel Teach Program, a professional development program that helps educators improve the effective use of technology in the classroom to promote 21st century learning such as digital literacy, problem solving, critical thinking, and collaboration. To date, this program has trained more than 3.5 million teachers in more than 40 countries. Costa Rica was the first Spanish-speaking country to initiate the program.

Along with other Intel® Education Initiative programs, the Intel Teach Program is adapted in each country to address specific needs and local education standards, and focuses on building a local competency for teacher training and technology innovation. Working with the Ministry of Education and, in some cases, regional education directors, the program has been tailored to meet local needs. This has included adding curriculum on basic computer usage to address the needs of Costa Rican educators who had no computer literacy at the outset of the program.

The Intel Teach Program has extended to all corners of the country, reaching some of the most rural areas of Costa Rica. Intel initiated a special project with the Ministry of Education, providing intensive training and computers, printers, and microscopes to 100 one-room-schoolhouse teachers. These teachers work in schools that are located in such remote areas of the country that the equipment was sometimes carried on horseback, over rivers, and up and down mountains. In more populated, urban areas where schools did not have access to computers, Intel has initiated a mobile resource classroom in 14

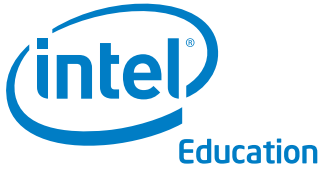
schools. Teachers in these schools can share available computer equipment using wireless technology to support the standard basic studies curriculum.

Since its introduction in Costa Rica, the Intel Teach Program has gained wide acceptance among educators. One of the revelatory moments Costa Rican teachers experienced through the Intel Teach Program training was how technology could assist them in planning unit lessons. Though the subject of planning had been addressed in their teacher preparation courses in university, many reported that the Intel Teach Program curriculum presented it in a much more practical and applicable way. Survey evaluations completed by the teachers showed that once the teachers applied the Intel Teach Program methodology in the classroom with their students, the classroom dynamics changed. Students were much more engaged, interactive, and interested in the content matter, and they took much more initiative to investigate their themes, work in teams, and polish their final projects for presentation. Students were generally more motivated and "learned more."

The effects of the Intel Teach Program are evident in Costa Rican student performance. During a recent Innovation Fair, an academic competition where students compete with projects ranging from science experiments to essay composition, Norma Solís, the National Advisor of the Education Innovation Fair Program, part of the Ministry of Education's National Center of Pedagogy, observed that in the past few years, she has noticed that a number of winners of the different competitions have something in common: teachers who have participated in either the Intel Teach Program or the Intel Costa Rica Students as Scientists program.

Because of results like these, the Intel Teach Program has gained increasing support from Costa Rica's Ministry of Education. After the first three years of the program, the Ministry began providing support to teachers interested in training their peers. The Ministry now offers civil service credits to teachers who participate in the program; these civil service credits qualify participants for higher teaching salaries. In addition, the Intel Teach Program has been incorporated into the national one-room-schoolhouse curriculum. Finally, the major public universities that prepare teachers have incorporated the Intel Teach Program into their pre-service curriculum.

To date, more than 30 percent of Costa Rican educators—that is, more than 15,000 of the country's 50,000 educators—have taken part in the Intel Teach Program. Plans are underway for continued expansion. Intel hopes to train the remaining 70 percent over the next five years. This ambitious goal is made possible by a recent Ministry of Education action seeking to "institutionalize" the training program by including the Intel Teach Program curriculum in the Ministry's professional development program and preparing more than 200 teachers located throughout the country's 20 education regions to provide continuous training and support to classroom teachers.



### **Intel® Education Initiative**

The Intel® Education Initiative is Intel's sustained commitment to prepare all students, everywhere, with the skills required to thrive in the knowledge economy by improving teaching and learning through the effective use of technology, and advancing math, science and engineering education and research. Through a sustained public-private partnership with educators and governments in more than 50 countries, Intel works with international organizations and governments at an international, national, and local level and invests approximately USD 100 million per year in education programs adapted to address the needs of each country to advocate for 21st century educational excellence through policy work and awareness efforts.

- **For more information visit:** [www.intel.com/education](http://www.intel.com/education)
- **For more information on the Intel Teach Program, visit:** [www.intel.com/education/teach](http://www.intel.com/education/teach)

1. 2000–2002 Intel® Teach Program Participant Surveys

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