

An animated penguin boosts kids' math scores

1 October 2009, By Lisa Fernandez

California's hottest new math teacher is an animated penguin named JiJi. Yes, it's true. A mute, waddling, tuxedo-clad cartoon figure has been quietly taking over math programs dotting Silicon Valley, dramatically improving test scores in mostly low-performing schools.

Take LeRoy Anderson [Elementary School](#) in San Jose, for example.

Nine percent of the fourth-graders there scored "proficient" in [math](#) in 2007, which means they performed at grade-level or higher during the California Standards Test. Then, the kids started using JiJi. The numbers jumped to 39 percent in 2008, and 70 percent in 2009. Of that 70 percent, 45 points fell into the highest category, called "advanced."

"The kids think it's a computer game," said Janis Hubbs, principal at Gardner Academy Elementary, another San Jose school in love with the penguin mathematician. "But really, it's all about higher level thinking skills."

Third-graders at Gardner Academy were 43 percent proficient in math. Last year, their math test scores soared to 60 percent. The only difference in the curriculum? A cartoon penguin who jumps over bridges to show linear equations.

"JiJi helps your mind," said 8-year-old Eduardo Alba, who recently "played" math games with JiJi, while learning multiplication and estimation skills at Gardner. "If you're below in math, JiJi helps you get more advanced."

JiJi is the brainchild, rather the brainpenguin, of the nonprofit MIND Research Institute in Santa Ana, Calif. Three University of California scientists came up with a visual math program to teach complicated "spacial temporal" concepts that are underutilized in most schools, said Andrew Coulson, president of MIND's education division.

So 11 years ago, the trio, headed by Matthew Peterson, created a computer software program with animated diagrams. JiJi was born.

MIND research shows schools below 50 percent proficiency in math average a 15- to 20-point gain within two years.

Today, there are 118,000 students in 22 states who use JiJi.

So far, 30 schools in San Mateo and Santa Clara counties are using the program. This summer, a consortium, partially spearheaded by the Santa Clara County Office of Education, called the Silicon Valley Math Initiative, announced it's funding JiJi at 23 of the schools for five years at a cost of more than \$1 million. Some seed money, or 19 percent of the total cost, was donated by Netflix founder Reed Hastings, Stephen Herrick, PriceWaterhouseCoopers, Symantec and Cisco. It costs about \$50,000 to buy the full math program for students in grades K-5 with an accompanying musical element.

Lest critics should worry that kids are being bombarded with too many video games, JiJi is no Nintendo. Think of the math program as a very high-order thinking skills worksheet. But instead of bubbling in circles on paper, students use the mouse to click on the correct answer. Since the program is interactive, students know immediately if they got it right when they hear a happy sounding "ding" and JiJi waddles to the next puzzle. They know they need work when JiJi sounds like she's fallen to the ground with a soft thump.

Also, the computer tallies how many times a child tries the program and shoots the results to the [teacher](#).

At Gardner Academy, there were several children who tried and failed more than 15 times. That lets the math teacher know right away that these

students need extra help.

"This doesn't replace the math curriculum," said Jill Fraka, math coach at Gardner. "It's a supplement."

Coulson said there are instances when JiJi doesn't work to its fullest potential. Mostly, he said, it's when schools don't rigorously follow the twice-a-week recommended program.

There were few naysayers at Gardner Academy, however, at a recent math lab. Jonathan Martinez, 8, said he thought JiJi is much "harder" than math he's done before -- that's as he was trying to estimate where to drag JiJi to show that he knows where 7,180 is on a number scale.

And Maria Fernanda definitely had mixed feelings about the penguin who was silently asking her to multiply 2 times 75.

The 7-year-old furrowed her eyebrows and frowned. She counted on her fingers and whispered aloud. Then, something flashed in her head. She clicked on 150, and JiJi's bell dinged out from the computer screen.

Like JiJi, Maria didn't really say much. But her body said it all.

She shot both fists up in the air like she had won a championship, and, obviously proud of her accomplishment, she mouthed, "Yessssssss!!!!!"

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