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LOCAL

## Innovative math program boosts scores at O.C. schools

Computer games and interactive visuals developed by a Santa Ana nonprofit are used at 64 elementary sites.

BY SEEMA MEHTA, *Times Staff Writer*

In the airy computer lab at Romero-Cruz Elementary School in Santa Ana, 11-year-old Davis Nguyen quickly completed math problems. Each correct answer let an animated penguin named JiJi take steps across a bridge. The computer game looked simple, but backers say it is part of an innovative and powerful new way to teach math, and standardized test results released Tuesday appear to back up their claims.

**FOR THE RECORD:** The headline on an earlier version of this article said 4.5% of California elementary students scored “proficient” or “advanced” in math, and that 13% of Orange County students using a new math instructional program scored “proficient” or “advanced.” As the story correctly notes, those numbers represent increases in the number of students scoring at those levels, not the overall percentage of students achieving those scores.

Across the state, schools saw a 4.5% increase in the number of elementary students scoring “proficient” or “advanced” in math. But 64 Orange County elementary schools that took part in a math program created by the nonprofit MIND Research Institute saw a nearly 13% increase in the number of students scoring in those top levels.

The achievement buoyed the schools’ rating as well.

At Romero-Cruz Elementary, more than two-thirds of students speak limited English and nearly nine of 10 qualify for free or re-

duced-price lunches, a measure of poverty. The school was in its fifth year of facing sanctions because it failed to meet federal achievement goals. But it gained nearly 90 points in the Academic Performance Index -- the state’s key measure of schools based on standardized test scores -- reaching a score of 759 and “safe harbor” from sanctions this year.

Such gains show that “demographics and background have nothing to do with kids’ success,” said Santa Ana Unified School District Supt. Jane Russo. “It has to do with the strategies we use, the teachers that are working hard and this wonderful partnership.”

The MIND institute used neuroscience research to create a way to teach math based on spatial-temporal reasoning.

“It’s thinking in pictures,” said Matthew Peterson, co-founder of the Santa Ana-based institute.

Using computer games as well as interactive visuals in the classroom, students are taught fractions, equations, comparisons and other math processes. Later, they learn the vocabulary and symbols that go with the subject matter. It’s a high-tech version of the paper money and metal coins that instructors have long used to teach about currency.

“It’s teaching math without a lot of added complexity that doesn’t need to be there,” said Andrew Coulson, president of the institute’s education division.

In the computer lab, students proceed at their own pace through lessons twice a week. The software records their work, so researchers can improve the computer pro-

gram or teacher training. Teachers can receive daily feedback on student progress to offer targeted help to anyone who is struggling or to redo a lesson if many pupils are having difficulty with a concept.

Teachers then make the connection between what students are doing in the games and the traditional math concepts, vocabulary and symbols that students must learn.

Last year, the institute, the county Department of Education and others raised \$1.1 million to use the program for over 15,000 students at 71 county elementary and middle schools in the bottom 30% of math achievement statewide. This year, they added 25 schools.

Teachers such as Aurora Esquivel at Romero-Cruz hope the program continues to grow. As she taught fourth-graders number comparisons, she said, it helped struggling students master concepts and gain confidence.

“It’s very inspiring, it’s very hands-on and it’s very engaging,” she said. “I have to drag them off. They’ll be late to lunch and recess to keep working on the computer.”

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