



California School District Engages Students With Interactive System

Given grant money to improve education technology, the Modesto City, CA School District invested in technology for maximum impact in junior high math and science classes.

Computer-based math training, scientific measuring equipment for gathering, charting and interpreting data, and parent access for online tracking of grades and classroom assignments have all been strong additions.

However, the component that has made the biggest difference is the Classroom Performance System (CPS) from Pearson NCS. CPS is a wireless interactive response system. Students use a hand-held remote to respond to the teacher's questions. The system allows every student in a classroom to participate, and provides teachers immediate feedback on how well students understand the topic.

The Need

The Modesto City School District, located 60 miles east of Oakland, has a growing and diverse enrollment of 34,000 students. They applied for a competitive grant funded through the No Child Left Behind Act. The U.S. Department of Education distributes Enhancing Education Through Technology funds to the states, which allocate half by formula and half through competitive grants. In the grant proposal, they focused on four junior high schools and identified math and science as having the greatest need for, and the greatest potential benefit from additional technology.

"I'm passionate about developing in our students the life skills they will need on a day-to-day basis. Let's teach children for their future. In their careers, they will work in teams, do problem solving, interpret results and use technology. We had to start teaching teachers to integrate technology into the classroom to get away from the stereotypical chairs in a row, rote memorization and raise your hand if you have the right answer. We're striving to make technology seamless in the teaching process so that it's just as natural for students to interact with technology as it is for them to use a pen or pencil", said Larry Hines, Director of Instructional Technology for the Modesto City School District.

The Selection

The District received the grant money and used a portion to buy:

- *12 Classroom Performance Systems and six wireless Chalkboards.*

Each system includes a receiver, which plugs into the teacher's computer through a USB or Serial port, and 40 response pads, which transmit students' answers to the receiver by wireless signal. A projector or monitor can be used to display objective questions and the answer given by each student. CPS makes it simple to build lessons and align them to state standards imported from the installation CD. CPS also utilizes ExamView® item banks available with over 2,000 popular education textbooks, or teachers create their own questions, and complement questions with graphics and diagrams. The system also features automated grading and reports for tracking student performance against state standards.

- *CPS Challenge Board software for each system.*

In mimicking the TV game show “Jeopardy,” Challenge Board provides an opportunity for collaborative learning. Students form teams and compete to answer questions grouped by subject matter and difficulty.

An interactive response system was one of the first items on Modesto’s wish list. There are others on the market, but two things sold them on CPS. First was training. They weren’t going to buy any technology that didn’t include training. Pearson NCS offered training on how to use the technology, and how to integrate the technology into math or science lessons.

Second, the system can track student performance against state standards. For teachers, the value lies in being able to gain an instant view of how students are doing on each standard. With that insight, teachers can adapt instruction to improve student performance.

The Results

After first-semester final exams, the science and math students scored an average of 4 to 6 percentage points higher on test scores. The teachers attribute that increase, in part, to CPS. If after only one semester of use scores increased by an average of 4–6 percent, imagine the impact of using CPS for the entire year!

Other Compelling Results

- When visiting a class where CPS is being used, there’s no question that it helps the teacher engage students. Students clearly have fun answering questions. In the process, they test their knowledge and see the areas they understand, and those that they have yet to grasp.
- The interactivity encourages all students to participate, even the kids who don’t usually participate. No one gets embarrassed because only the teacher knows which student holds which answer pad. That high level of involvement creates teachable moments. The students’ answers instantly alert the teacher if the class and individuals are having trouble with a concept. When students are punching the buttons, you can see who is hesitating and who is changing their response. You can see when students don’t get the concept. Then you can stop and explain.
- The teacher can measure comprehension at that moment – and either move on or spend a little more time on that lesson. In this way, CPS helps to improve teaching, which improves student performance.
- The Challenge Board introduces a new form of collaborative learning. This fun, interactive game format creates lively sessions that reinforce understanding through repetition and review.

When it comes to testing, CPS has changed Modesto's instructional methodology. Teachers can make a presentation and pause to ask questions along the way. Or they can use paper tests and have students answer using their remotes. Either way, the results are automatically stored in the CPS gradebook.

Modesto City School District plans to buy about 20 more Classroom Performance Systems for eighth-grade science and math, and will likely expand the use throughout the school. This technology has made testing exciting for students and teachers.

“Students actually come into class eagerly asking, “Are we having a quiz today?” And teachers say their colleagues are begging to use CPS. Ask any one of Modesto’s teachers and they’ll tell you that CPS was the best investment that could have been made in technology for junior high math and science”, said Hines.

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Pearson NCS
1313 Lone Oak Road
Eagan, MN 55121

Phone: 651-683-6000
Toll-free: 1-800-447-3269
Fax: 1-800-347-7226

All non-U.S. inquiries
Phone: + 651-683-6346
Fax: + 651-683-6301

PearsonNCS.com
info-ncs@pearson.com