

Teachers who pass technology-training exams are rewarded with equipment such as document cameras and projectors, says Barbara Brown, Lewisville's executive director of technology.



# Creating Digital Learners

Pairing projectors and document cameras can give your lesson plans a digital overhaul.

By Carl Vogel

Sometimes, the simplest ideas can have the biggest impact. Two almost basic technologies – the document camera and the digital projector – aren't the flashiest new technologies available. In fact, echoing what's provided by the old overhead projector, they might not seem new at all.

Yet by allowing every child in the room to view what's being presented, the new generation of easy-to-use projectors ensures that all those cool websites, presentation tools, educational software, streaming video and other digital tools are actually incorporated into the classroom – and seen by the students. Attach a document camera, and any object in the room, from

the front page of today's newspaper to a dissected frog, is accessible to the whole class. Here are two district case studies of how projectors and document cameras can have an impact on the everyday curriculum.

## LEWISVILLE INDEPENDENT SCHOOL DISTRICT

For the past six years, when an educator at one of the 60 schools in the Lewisville Independent School District, in the suburbs north of Dallas, passes a tech-skills assessment, the district has provided him or her with a teaching-tool upgrade, such as a multimedia notebook. Since last year, in response to high demand from the faculty, every teacher who passes a level one assessment receives an Epson 83+ digital projector along with a new notebook.

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Starting this year, passing a level two assessment has been rewarded with an Avervision CP300 document camera.

Roughly 95 percent of the faculty now have passed the level one assessment, and 70 percent successfully passed level two, estimates Barbara Brown, the district's executive director of technology. Now, about 2,000 teachers in the district have a digital projector in the classroom, and 1,000 have a document camera.

Lewisville ISD keeps a close eye on how well students are performing on standardized tests and makes differentiated education a priority. Technology is integrated with these goals in mind. "We always go back to best practices," Brown says. "My role is to get the tools out there and then get them seamlessly integrated." A strong push by the director of secondary language arts for document cameras because of how well they help students learn writing made a big impression on Brown, who regularly works with the district's curriculum department.

The decision to start providing document cameras and projectors throughout the district was made easier because of recent technical improvements in the projectors, according to Greg Veal, the assistant superintendent of technology. "The bulb life is higher, and the bulb cost is more in line with what we could handle," he explains. "And they now provide 2000 lumens, which means you don't have to shut down the lights every time you want to use the projector."

Kathryn Schuetts, one of 25 instructional specialists in the tech department who works with three elementary schools in the district, says that she's seen the projectors and document cameras put into action relatively quickly by teachers of all types. Typical uses include a kindergarten teacher reading a picture book to the class using a projector and document camera and first graders collaborating on writing on the big screen.

"They're very easy to use – you just turn it on," Schuetts says. "Teachers can teach on the fly. Anything they find that's useful they can share with the whole class."

In Amy George's science classroom at Hebron High School, the document camera is always set up and ready to go. Some days she flips it on to show an experiment unfolding, so all the children can watch. Sometimes it's the focus of a project, such as when she has every student bring in a rock or some soil from near their home for a unit on geology. Together, they examine the projected image of each of the samples, then over the following weeks, students research what they found and create a video report with the images captured from the document camera. Of course, they share the videos via the class projector.

"Most students today are digital learners. They're accustomed to iPods, computers, televisions and video," says George. "I find the projector and document camera motivate the students and help them engage in the class."

## METROPOLITAN NASHVILLE PUBLIC SCHOOLS

Last year, Metropolitan Nashville Public Schools in Tennessee drew up a five-year tech delivery blueprint. This school year, the first hardware was deployed to two sets of six demonstration schools on opposite sides of town.

With budget pressures always a concern, the district wants to be sure that its technologies are working as they've been billed and that teachers are actually using the machines in the classroom. Each school is required to write up how it wants to allocate its tech budget, including a detailed explanation of how projectors, slates, notebooks and printers will be used in instruction.

John Duckworth, the district's director of instructional technology, says his department has ordered more than 1,200 Epson projectors this year. "We're pleased with the teacher engagement in using the devices," he says. "We know a whole lot more now about all this than six months ago, before we started working with the demonstration schools, and one thing we've learned is that it's really difficult to move to a digital environment without a projector. We really want to see how they impact AYP and student learning, but we expect to deploy in excess of 4,500 projectors over the five-year plan."

As in Lewisville ISD, teachers in Nashville find that because the projectors are so easy to use, they are more likely to incorporate the machine into their pedagogy.

"I use my projector every day," says Cathye Hancock, a language arts and history teacher at Bellevue Middle School, one of Nashville's demonstration sites. "If someone tried to take it away from me now, I'd be real upset."

Hancock uses the projector to show images such as Revolutionary War battle maps and historical streaming videos, and student projects now include PowerPoint demonstrations that can be presented to the whole class. "Everybody can be engaged and on task. I find that because of [the projector] and the other technology in my class that I'm relying less and less on the textbook," she says. "It's totally revolutionized my teaching – I love it!"

## INTEGRATION TIP

Here are five ways you can integrate a document camera into your school's elementary school lesson plans.

- Have students draw background scenery for their play, then project the image behind them when they perform.
- Teach math by putting a protractor and ruler under the camera for all to see clearly.
- Use the camera to have the class read and follow along from the same book.
- Quickly call up maps for social studies and history assignments.
- Project a piece of lined paper on your whiteboard. Now students writing on the board can keep their work straight.

SOURCE: Tim Bedley, teacher, Wildomar (Calif.) Elementary School