Success Story

Mississippi Math Teacher Uses Technology to Engage Students and Improve Performance

When Shauna Hedgepeth teaches high school math next year, technology will feature prominently in her classes. In her middle school classroom, students have routinely posted their own math videos to websites created with HTML codes she taught them. Like all middle school teachers, Hedgepeth must keep her students engaged in the curriculum, while differentiating for individual student needs and learning styles. She must also ensure that her students have the problem-solving and critical-thinking skills necessary to succeed beyond middle school.

Over the past few years, Hedgepeth’s use of technology has helped her achieve these goals and reaffirmed her belief in its potential as a learning tool. As a seventh-grade math teacher for seven years at Oak Grove Middle School (OGMS) in Lamar County, Mississippi, Hedgepeth teaches students from a variety of backgrounds. As Hedgepeth explains, “You might have students whose only meal each day is a school lunch in the same classroom as students who have already picked out new cars for their sixteenth birthday.”

Most students in Hedgepeth’s classes have been raised with technology around them, but until now, have not experienced it as an integral part of their education. Although many students enter her classroom with negative preconceptions about math and low levels of interest, Hedgepeth has seen dramatic results, not only in levels of engagement but also in performance. In fact, student math scores at OGMS are among the best in Mississippi.

Selecting the Right Learning Tools

Hedgepeth was one of 40 teachers in Lamar County who received a Cisco® grant in the year following Hurricane Katrina. The Cisco 21st Century Schools Initiative (21S) provided funding to seven Mississippi school districts to install transformative technology in the classroom for enhanced teaching and learning. Hedgepeth obtained learning technologies that she deemed useful in addressing her students’ needs. The grant allowed her to upgrade her classroom with an interactive whiteboard and an interactive response system that allows students to answer questions anonymously with a hand-held device.

Hedgepeth was quick to integrate these new technologies into her lessons, and she involved students in the process from the beginning. She selected tools based
on her students’ needs and interests. When they expressed interest in her website, she taught them how to create their own to assist with their math homework. The students also used their skills to help other teachers build websites.

One of the most popular technologies Hedgepeth employs allows students to record on-demand videos, or “vodcasts,” and upload them for online viewing. Students use this technology to create videos that explain how to solve particular math problems. They can access the videos from any Internet connection, which extends learning beyond the classroom and allows students to review problems and obtain help outside regular school hours.

Addressing Specific Learning Needs

If students have learning disabilities, self-confidence issues, or other special needs, Hedgepeth says that the classroom technologies enable her to engage them so they don’t feel different from any of their classmates. Describing one student who stutters, she notes, “When he uses the video recording technology to make a vodcast, he has a completely different voice. As soon as he gets up to the microphone and hits the Record button, he stops stuttering. The kids love hearing him.”

Previously, Hedgepeth had difficulty getting students to come up to the board to explain problems in front of the class. Now, she has to make a list of presenters at the beginning of class because “kids cannot wait to go to the board.” Her students also produced so many vodcasts on their home computers that she assigned student leaders to manage the large number of vodcasts being submitted.

Assessing Comprehension Instantly

As with videos and vodcasting, Hedgepeth’s students quickly embraced hand-held interactive response systems. This technology allows Hedgepeth to quickly gauge whether students grasp a problem or concept, based on their instant responses. She says that the devices, which look a lot like cell phones, have two main benefits: “First, students love any excuse to send text messages during school. And second, I don’t have to wonder about what mistakes they may have made and whether they missed out on a major concept. Every response from each student is automatically displayed on the screen.” As a result, she explains, “It lets me see every possible mistake that they may have made so I can adjust my teaching accordingly. I can go back and teach a topic again right away.”

By continuously assessing the needs and interests of her students and carefully selecting classroom technologies, Hedgepeth has been able to reach students who were not previously interested in math, while also encouraging critical thinking, problem solving, and peer teaching. “At the end of the year, I ask how many students either like math or have an appreciation for it at some level. And the same percent that like it hated it when I polled them at the beginning of the year,” she says.

As Hedgepeth moves on to teach high school math, she will bring some valuable lessons from OGMS, including her experience with technology. “I am interested to see if using these same technologies with high school students, and putting them in charge of their learning, will change their attitudes about math,” she says. “I am very excited about that.”

Thanks to Hedgepeth, her students are much better equipped to tackle more challenging topics in the years ahead.

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