



TEACHING THE DIGITAL NATIVES

TECHNOLOGY
CHANGES
21ST CENTURY
CLASSROOMS

By Vicki Mayk

Building a model of the solar system—complete with little planets made from plastic foam balls—has no place in Kathy Schrock’s world. Schrock, an adjunct professor in Wilkes University’s master’s degree program in instructional media, likens it to an ancient artifact with little relevance for today’s digital learners.

“We need to be using technology to allow students to do alternative assignments,” says Schrock, a nationally recognized expert on technology and education who has authored six books and presented more than 100 workshops on the subject. “We need to be asking them, ‘Do you want to do a video about that, or a comic strip, or a Flash video presentation?’ They still have to

demonstrate that they know the material. Changing how they do it is the big step.”

Offering students alternatives for completing assignments is just one aspect of the 21st century classroom, a place that actively engages students by using technology—from interactive whiteboards to digital cameras—as tools to teach and inspire. The 21st century classroom will find some students making a video instead

of writing a term paper. Virtual field trips will take them to an art museum on the other side of the world. And if their high school doesn’t offer a particular advanced placement class? No worries: They can take the class online.

Computers have been in schools for more than two decades. But it takes more than equipment to transform schools for the future. Michael Speziale MS ’78, dean of Wilkes University’s College of Graduate and Professional Studies, says more is required.

“Computers have had little, if any, effect on transforming our classrooms because they haven’t been used effectively,” Speziale says. Classrooms of the 21st century, he explains, must reflect the way members of the millennial generation—those born between 1982 and 2000—think. “They multitask, they collaborate, they live, breathe and work in social networks. And there is a whole body of research that addresses how these students learn and how to reach them,” he states. “Then they come to school, and we ask them to park the technology at the door.” The way to teach them, he explains, is to use a variety of media that engage them in learning collaboratively.

The key to transforming schools is transforming teaching methods to incorporate the wide variety of digital and online tools available. Helping educators learn how to do that is the focus of several Wilkes University master’s degree programs in teacher education. One of those programs—21st Century Teaching and Learning—starts by helping teachers understand why change is necessary.

“We tell them that they’re not doing something wrong: The students have changed,” says Kathleen Makuch, program coordinator and a former school superintendent. Their students,



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Left: A computer is always close at hand for Pamela Oliveira, a teacher in the Wyoming Valley West Middle School in Kingston, Pa., and a student in Wilkes' master's degree program in instructional media.
PHOTO BY BRUCE WELLER

Below: Jim Kotz '90 MS'92 demonstrates the use of an interactive whiteboard as a technology coach in the Lackawanna Trail School District.
PHOTO COURTESY JIM KOTZ

she explains, are “digital natives”—a term coined by e-learning guru Marc Prensky to describe youngsters who have never known a world without the Internet and cell phones. Teachers are “digital immigrants” who have had to learn the equivalent of a second language.

Gone are the days of lecturing by the teacher. For digital natives, Makuch explains, “project-based learning” is the key. “Teachers are the facilitators of learning. They set up projects and the students do the learning.”

The need for change drew Pamela Oliveira, a teacher at the Wyoming Valley West Middle School, to enroll in Wilkes' instructional media program. “Chalk boards and worksheets aren't preparing our students for the world in which they will perform,” Oliveira says.

Jim Kotz '90 MS'92, focuses on helping teachers master the tools in his role as technology coach for the Lackawanna Trail School District in Factoryville, Pa. “Newer teachers have been using the technology all along. For experienced teachers, it's a matter of finding the time to incorporate it into their lesson plans,” Kotz says.



Once they do, many become advocates. He cites one veteran science teacher who “jumped right in” and made lessons interactive. For example, students in his classroom study anatomy by placing organs in a digital human body.


The assignment to create a model of the solar system still has a place in the digital universe. Using simulated modeling, students can build the solar system, set the planets in motion and watch them orbit the sun. Barbara Moran '84 MS'88 and Victoria Glod MS'91, program coordinators for Wilkes' classroom technology and instructional technology graduate programs, can identify dozens of such resources. Technology can be especially helpful in teaching challenging concepts.

“Sometimes the concept of slope can be difficult for students to understand,” Glod explains. “If they take digital pictures of roofs with various pitch and then use Google SketchUp to outline the height and width of the roof line, they can calculate the slope of the roof.”

And for those who fear that technology is making education more impersonal—Moran disagrees.

“It's getting more personal,” she states. “Students can be online with their peers from New York to California and collaborate with them on a project. Twitter, Facebook, Web cams—here are endless options for being connected.”

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