RETOOLING LESSON PLANS FOR THE DIGITAL AGE

How innovative teachers are using technology to empower students and prepare them for tomorrow's jobs

Dyane Smokorowski’s approach to teaching was forever transformed the day she and her eighth-grade language arts class had a Skype meeting with Dan Glickman, then the CEO of The Motion Picture Association.

The Andover, Kansas, middle-school students were reading *Treasure Island* and exploring the landscape of digital piracy, plagiarism and copyright law as it related to the novel. Instead of simply relying on textbooks and search engine results, the class cold called the Motion Picture Association and soon was exchanging ideas one-on-one with the CEO.

The students were on the edge of their seats, thrilled at the realization that they have access to powerful people all over the world, says Smokorowski. “That day changed everything about the way I teach. From that point forward, it has become my mission to use whatever tools I can to link my kids to experts in content areas.” The students went on to arrange 16 more Skype meetings—including experts from the FBI, a gaming company, and a radio station. The class then compiled the research into a website that other teens can use to learn about intellectual piracy.

In today’s digital world, teachers are preparing kids for jobs that don’t even exist yet, says Smokorowski. So, teaching students to communicate, to collaborate and to be critical thinkers is essential. To foster these skills, teachers are looking for new tools and approaches, she says. For instance, inspiration for her piracy project came from an Intel® Teach course, relates Smokorowski. Designed to help K-12 teachers integrate technology into classrooms, the Intel program offers training in student-centered learning and project-based ideas.

Students are responding to this innovative teaching, says Smokorowski. “With this project, my students learned they could have any question answered if they knew the right person to ask. That is a life skill. It’s a game changer,” she says. And it’s much more powerful than just having a professional come into the classroom to speak on career day. Smokorowski, now an Intel Teach senior trainer, is helping other teachers across her state design inventive teaching methods through the program’s online development courses.

Erin Brabant, a sixth-grade earth science teacher at STEM Magnet Lab School in North Glen, Colorado, agrees that new tools are critical and that kids learn by doing. That’s why her class is equipped with an air-pollution monitor that’s connected to a weather station and that offers real-time hard data on atmospheric pressure, temperature, and ozone levels.

The monitor, provided as part of the Global Ozone Project, is a powerful alternative to textbooks, where information is often presented in neat charts with clean lines. Brabant wants her students to be able to think critically about data; to see that wind blows, clouds pass, temperatures drop suddenly, and monitors have glitches. “When kids pull up spreadsheets and are looking at data in a large set, they can see that it isn’t pretty,” she says. They don’t come prepackaged in easily understood graphs and pictures.

To connect the research to the larger world, Brabant worked with the school’s science club to collect data on air quality during dismissal time. For three semesters, students recorded vehicle types—hybrids or, say, SUVs—and indicated how many cars were idling during pickup. The research made a deep impression on students, says Brabant. “They have spent so much time and energy trying to get our community to be conscious of pollution that I don’t have to prompt them; they regularly point out egregious behavior,” she says. “I don’t have to say anything.”
Douglas Kiang is intent on connecting his students to the world as well, albeit via a virtual one. The AP computer science teacher at the Punahou School in Honolulu uses the popular video game “Minecraft” to generate creativity and encourage collaboration among his students. His 30 students use the game, with its graphics that look like giant digital LEGO® pieces, to work together to build a virtual landscape in which they can create entire villages—roads, houses, art museums—and all the ensuing rules. Most of the gaming is done outside of the classroom, but Kiang allocates a bit of time each day for the kids to share how they built something or to brainstorm to solve a problem.

“It’s kind of like settling the frontier,” says Kiang.

At the beginning, the students determined the community’s rules, such as “Don’t break things” and “Keep the world beautiful.” But enforcement in the game proved challenging. After one student started creating large sculptures—a 40-foot snake, a giant Winnie the Pooh—some students grew annoyed that their ocean view was blocked by Pooh. The class concluded, however, that their classmate hadn’t broken any rules. “And that’s the point,” says Kiang. “I wanted to create a learning environment that allows students to thrive and become resilient, resourceful learners. ‘Minecraft’ is a means of getting kids to be actively engaged in building something they care about, with the freedom to do their best work their own way. Along the way, they are helping each other become better learners.”

Sure, the students are also learning the core stuff, concepts such as Boolean algebra, says Kiang. “If you ask what I teach, it’s AP computer science, but what I’m really teaching is AP learning,” he says. Lessons born out of “Minecraft” and other untraditional approaches lead kids to become better learners. “Those lessons cross over into every class they are taking and into other aspects of their lives.”

Eventually the Pooh statue squabble was sorted out with some new zoning regulations. “Afterward, one kid said to me, ‘I’m starting to think that the only reason law exists is that someone broke it before it was a law,’” says Kiang. “Which I thought was pretty perceptive.” It’s an outlook that will serve him well in future gaming conundrums—and in the real world.

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