Digital Trends Shifting the Role of Teachers

Digital Curricula @volving

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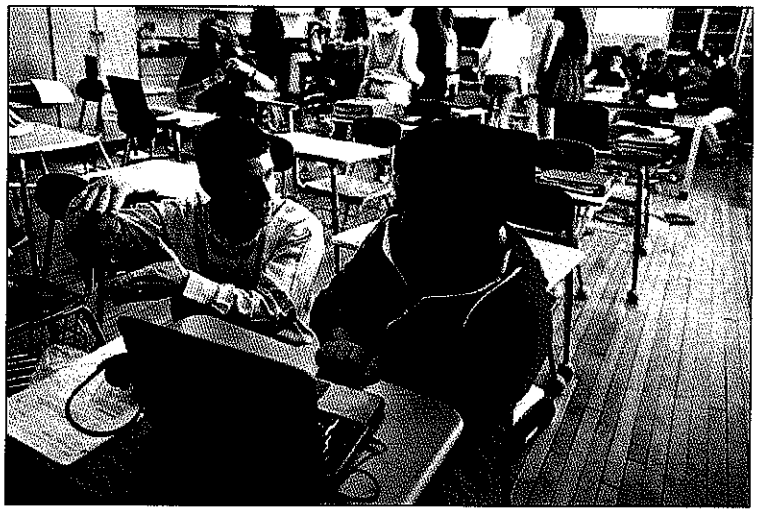


Mr. Merkert offers one-on-one instruction to Rafael Marquez during an 8th grade earth science class. The teacher uses a "flipped" approach, in which students watch video lectures outside of class to free up more class time for discussion, analysis, and personal attention.
—Emile Wamsteker for Education Week

Chris Merkert, a veteran teacher who has spent nearly two decades in the classroom, is constantly tweaking his lesson plans. It's become a kind of obsession.

One recent evening, he sat watching TV with his wife when the news broke that an infrared camera had helped capture Dzhokar Tsarnaev, the man charged with setting off explosives during the Boston Marathon.

Mr. Merkert's response? He began retooling the following week's lesson on the electromagnetic spectrum, using a YouTube clip of the news broadcast as a hook to lure in his middle school science class.

Mr. Merkert, 41, teaches 8th grade earth science at East Hampton Middle School in New York. It's one of three schools in a district of around 2,000 students on the eastern tip of Long Island's South Fork.

"My wife's asking me to put the iPad down, but I don't even want to watch television," he said during a break between classes. "It makes the next day so much more interesting. It's really lit that fire.", a Samsung laptop that uses a Chrome operating system, in December 2011, Mr. Merkert has altered his teaching style—spending less time holding court at the front of the room and more time crisscrossing the classroom to answer questions and

provide individual, targeted feedback. And rather than rely on outdated textbooks to drive the bulk of his instruction, he now writes his own curriculum.

Back in the "dark ages," he says his students might have listened to a lecture, read aloud from their textbooks, and completed a worksheet.

Now, during a recent 45-minute class period, his 21 students listened to a pop song about gamma rays created by a fellow science teacher that Mr. Merkert found on Twitter; completed a digitized, five-question formative assessment on their laptops after a mini-lecture on wavelengths; and queued up the evening's homework by logging in to **Edmodo**, a social learning platform, where they can email their teacher with questions and also ask their classmates for help.

"I'm no longer giving 40-minute lectures four times a day and wondering which class got the raw deal, or collecting and grading exams only to discover too late that they weren't getting it," said Mr. Merkert, who rotates among small groups of students, each with a laptop wide open.

As increasing numbers of school districts go digital, many teachers are witnessing a simultaneous change in their roles. To be sure, some see it as simply traditional teaching in disguise, but others describe a seismic shift—from being the lone purveyor of information to assuming a new role of facilitator, coach, and guide.

As a Google-certified teacher, a designation given to individuals who have completed the **Google Teacher Academy**, a highly selective professional-development program, Mr. Merkert has long been a proponent of using technology in the classroom.

In the spring of last year, the Science Teachers Association of New York State named him Suffolk County's science teacher of the year for his use of "flipped teaching." That approach allows students to watch short videos of instructional material during evenings and on weekends, freeing up valuable class hours for discussion and analysis.

By moving much of the direct instruction to nonclass hours, Mr. Merkert says, students can pause and rewind concepts that are giving them particular difficulty. Or, say, when prepping for a quiz, rather than reviewing hand-written notes, they can simply watch the videos over again. It's also freed up more class time for experiments and extended the learning day.

"There's so much you can now do to innovate and adapt. It almost becomes addictive," he said, with a smile. "I'm more enthused and involved than I've ever been. I can only hope that enthusiasm translates to my students."

'Learn the Technology or Get Out'

Teacher Chris Merkert performs a supercooled-water experiment during an 8th grade earth science class in East Hampton, N.Y. He says digital tools help free up more class time for experiments. —Emile Wamsteker for Education Week

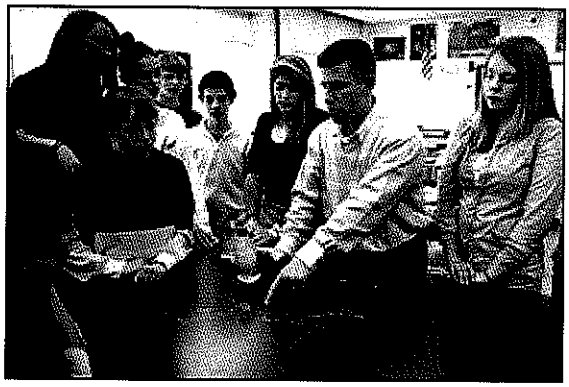
When several of Rose Ann Throckmorton's colleagues saw the digital transformation headed their way, many decided it was easier to simply retire than learn a whole new way of approaching their craft.

"I've known teachers who have taught the same thing, read the same book, and used the same bulletin board, year after year after year," said Ms. Throckmorton, 50, a 4th grade teacher at Rural Hall Elementary School in the Winston-Salem/ Forsyth County schools in North Carolina. In total, she has taught for 24 years.

Last summer, Steven W. Anderson, the director of instructional technology for the 54,000-student district, approached Ms. Throckmorton with the possibility of participating in a pilot that would equip all of her 4th graders with their own Samsung Galaxy tablet computers. She leaped at the possibility.

"Twenty-first century classrooms are coming whether we want them to or not," said Ms. Throckmorton, who possesses neither a smartphone nor wireless Internet at home. "When I signed up for this, I realized I wasn't technologically savvy, but I knew it was coming, and if I planned to stay in this profession, I knew that I had to either learn the technology or get out."

The road was bumpy at first, Ms. Throckmorton admits. She started out by trying to focus too much on the technology itself and not enough on the content. But after growing



frustrated, she decided to simply plan her lessons the way she always had, and used the technology as an additional layer, or tool, to advance it.

Compared with previous years, student engagement has improved, and her class is now able to tackle more material in significantly less time, she says.

For instance, when learning about the phases of the moon, rather than handing in a grid of nightly sketches, students used their tablets to take pictures of the moon and built a narrated slideshow of their findings.

Consequently, Ms. Throckmorton also sees herself playing a different role in the day-to-day functioning of her classroom.

"Because of the cooperative learning and because of the higher-order thinking, I now give a 20-minute mini-lesson, and they have the resources right in front of them to run with it," she said. "In past years, I would have been standing at the front of the room lecturing the entire time, which I hate."

And rather than becoming intimidated by a student who might be more nimble than she is in using technology, Ms. Throckmorton views students as a team and often relies on their expertise to help fill in the gaps.

"One afternoon, some of us suddenly lost the Google toolbar, and a few students showed everyone how to get it back up," she said.

Mr. Anderson sees the role of the teacher as undergoing a fundamental overhaul. He sees it as part of his job to help dispel the inevitable fear that comes along with such changes.

"It's less of kids sitting in rows and listening to the teacher, from Charlie Brown, than a teacher on the sidelines who is listening to what kids are doing and saying and providing that guidance," he said.

In contrast with the 2012-13 school year, with six classrooms piloting the tablet-based 1-to-1 computing initiative, the entire Winston-Salem/Forsyth County district is planning to put

in place a "**bring your own device**," or BYOD, initiative in September. Students will be allowed to bring their own digital devices—whether a tablet, a laptop, or a smartphone—to school.

But the difference, Mr. Anderson says, is not simply the presence of such devices in the classroom.

"The biggest shift has to happen in teaching. It's a pedagogy shift that teachers will have to undergo, from teacher-centered to student-centered, and it's pretty incredible what we're seeing so far," said Mr. Anderson, who has worked in the district for the past decade.

"Because when the student has access to the same amount of information as a teacher, teaching has to change," he said. "Teachers simply can't do what they've traditionally done. It's impossible."

Part of that change is jettisoning the notion that younger teachers are necessarily better equipped to teach in a digital classroom.

So far, in Winston-Salem, of the six teachers in the district's 1-to-1 computing pilot, the two teachers with 20 years or more of experience are outperforming their younger, less experienced colleagues, according to Mr. Anderson.

"They might have come to this kicking and screaming, but the teachers who have been the most successful didn't necessarily know anything about technology. They were the masters of their content," he said. "For some of the younger teachers, who are still grappling with classroom management and learning the content, it's been a very difficult transition."

Getting Connected

Karen Cator, the new president and chief executive officer of **Digital Promise**, an organization first authorized by Congress to accelerate innovation in education that is now an independent, bipartisan nonprofit based in Washington, similarly thinks districts should abandon the mythology that younger teachers are necessarily more capable of integrating technology in their classrooms. —Emile Wamsteker for Education Week

Going forward, Ms. Cator sees teachers as one spoke on a personalized learning network, with the role of the teacher shifting from what she describes as an explainer-in-chief to more of an orchestrator of learning.

"The future of teaching is going to be about creating a more complex learning environment, because students can do much of their own work," said Ms. Cator, who previously was the U.S. Department of Education's top educational technology official.

"In the past, teachers had to find the resources, find the experts, get the kids sitting down and listening," she said. "Now, it's become so multilayered, with every student having their own device and getting individual feedback."

Josh Stumpenhorst, a 6th grade teacher at Lincoln Junior High School in Naperville, Ill., sees the shift as having less to do with technology and more to do with teaching.

"You can digitize a worksheet and put it on an iPad and not change anything at all," said Mr. Stumpenhorst, 32, who is in his 10th year of teaching language arts and social studies. In the 2011-12 school year, he was named Illinois' teacher of the year.

"The shift to student-centered classrooms would have happened anyway," he said, "but the technology has definitely made it easier."

Targeted Mini-Lessons

Since his classroom became one of seven in his 20,000-student district to pilot a BYOD initiative, Mr. Stumpenhorst rarely stands before his class for more than five or so minutes at a time, he says.

Instead, as students work in small, self-directed groups, he moves around the room delivering targeted mini-lessons based on the individual needs of his students.

"If I stand in front of the class and talk for 40 minutes about a theme, the kid in the front row who already knows it is bored out of his mind and has completely tuned me out," Mr. Stumpenhorst said.

Increasingly, he sees his job as one of helping his students evaluate information.

"Kids have more access to content than I have," he said. "They find all this garbage on the Internet, and it's my job to help them figure out what's true, what's relevant, what's accur

For advancing his own craft and coming up with new ideas, Mr. Stumpenhorst—like several other teachers interviewed—has grown increasingly reliant on Twitter.

Rather than ask a colleague down the hall, he often solicits feedback from educators across the country by using certain hashtags or posing a question to his more than 12,000 Twitter followers, most of whom are fellow educators.

Tom Whitby, a retired teacher who taught high school English for more than 30 years, now conducts workshops on digital teaching and contributes to the **SmartBlog on Education**. He sees the transition among educators still occurring in pockets—with a huge gulf now developing between what he describes as connected and unconnected educators. He defines connected educators as teachers who are comfortable with collaborative learning, social media, and sharing their ideas online.

It's a changing role that takes some adjustment.

"We have to get away from the mindset of teachers as content experts," said Mr. Whitby. "It's how most teachers were brought up, that you don't make a mistake in front of your class, that only one person can have control, and it's the teacher who must have control."

He underscored the importance of a school culture that supports risk-taking and fosters creativity for those looking to make the digital leap.

"If I limited my students to the content in my own head, I would be doing them a huge disservice," he said. "Students are no longer empty vessels, where it's our job to fill them with the knowledge that we have. We don't have all the facts. Our role is changing every day."