EDUCATION WEEK
Published Online: May 22, 2012
Published in Print: May 23, 2012, as **Let's Use Technology To Support 'Creative Agency' Classrooms**

Use Technology to Upend Traditional Classrooms

By Justin Reich

Back to Story

The most impressive technology-rich classrooms don't look like classrooms. Instead, they look like creative businesses on deadline—like advertising agencies pulling together a big campaign, architectural firms drawing up blueprints, or software companies developing new programs.

I recently visited a middle school science class as students toiled away on science fair projects using a classroom wiki: a widely adopted collaborative Web platform. As I watched, students uploaded graphic displays of their data, commented on each other's hypotheses, and recorded video journals of their progress. The room buzzed with activity, as each of these young knowledge workers made contributions to their collective endeavor. When students got stuck, other students jumped from their desks to help. The teacher circulated through the classroom like a project manager, answering questions, providing feedback, holding students accountable to deadlines, and providing just-in-time instruction.

In "creative agency" classrooms such as this one, learning technologies enable students to collaborate with peers, pursue their interests, publish their work to the world, and take greater responsibility for their own learning.

The creative-agency metaphor is particularly useful for thinking about the possibilities of new technologies since it stands in stark contrast to the dominant metaphor of schooling: the factory, where a standardized curriculum is delivered as efficiently as possible to groups of students treated as uniform receptacles. The fundamental question for education technology in the century ahead is this: Will we use new tools to rethink the purposes and structure of education, or will we simply use technology to boost efficiency in our factories?


—iStockphoto.com/ryccio

For some advocates of blended, or technology-enhanced, learning, efficiency is measured by the pace at which students learn content. Technology entrepreneurs and evangelists envision a future in which computers personalize instruction: Each student sits at a terminal that delivers educational lessons at an appropriately challenging pace. By frequently assessing students with computer-graded assignments, the system delivers personalized instruction to each student. As a result, rather than requiring every student to sit through a 55-minute class on a topic, each student uses the minimal number of minutes required to demonstrate mastery. Proponents of this model are not looking to change the factory model of education so much as they are trying to give each student her own assembly line.

Many of the largest providers of online learning opportunities describe efficiencies related to cost per student rather than learning gains per student. How many students can be taught with nearly teacherless self-paced courses? How much can schools save by eliminating buildings and utilities? To what extent can online schools require parents to provide the pastoral care and academic mentoring that schools currently provide with teachers, deans, advisers, and counselors? In this model, the

"Do schools spend huge sums on technology to do different things or to do the same things faster?"

focus is less on personalizing the speed of the assembly line for each student and more on making it less expensive to run the factory. In an era of crushing pressure on school budgets, many systems find these arguments compelling.

The tension between demolishing and replacing the factory or making the school "factory" run more efficiently has been vividly displayed in the multiple visions espoused by Salman Khan, the personification of digital teaching.

Khan Academy consists primarily of a collection of mathematics and science videos, many which demonstrate how to apply standard algorithms for solving equations. Khan Academy also includes a set of computer-generated practice problems, organized around a map of the mathematics curriculum from single-digit addition to calculus. When students complete problems successfully, they progress through the map of the curriculum. When they enter incorrect answers, the system provides links to hints and relevant video lectures. It's a powerful tool, and Salman Khan has outlined at least two distinct visions for its use.

In some talks and interviews, Khan has argued that his online videos should play an auxiliary role in mathematics instruction within a "flipped classroom" model, meaning students would watch his lectures for homework and then use classroom time to solve problems, complete projects, work collaboratively, pursue inquiry, and learn to write and think mathematically. The Khan videos are resources that support student knowledge workers as they tackle the more cognitively rigorous challenges of the creative-agency classroom.

At other times, however, Khan has described Khan Academy as the core, and not a supplement, to the math curriculum. In this model, students come into class, sit at a terminal, watch academy videos, and solve problems. The system motivates students with video-game-inspired systems of points and badges. Students then are freed to move at their own pace through lectures and problem sets, teachers have access to reams of data about student performance to provide individualized instruction and remediation, and developers can use student-performance data to constantly iterate and refine the videos and problems. (Or, presumably, some school systems could use these tools to entirely replace human educators with machines, perhaps with inexpensive security guards to maintain order and protect the equipment.) In this vision, students are still learning in a standardized factory setting, and the technology serves to deliver an algorithm-based mathematics curriculum as efficiently as possible.

Writ small, teachers and schools face this dilemma with new technologies every day. Will that new interactive whiteboard be a station where students display and share their understanding, or will it be a Web-connected slide projector for delivering bullet points? Will a one-iPad-per-pupil program allow students to pursue individual research and create multimedia performances, or will iPads reduce costs by consolidating four textbooks onto one device? Do student-response systems foster dialogue, peer teaching, and self-assessment, or do they speed up the grading of multiple-choice quizzes? Do schools spend huge sums on technology to do different things or to do the same things faster?

The most interesting debate in education technology today is not about tablets vs. laptops or school-supplied tablets vs. bring-your-own-device scenarios. The choice is really between two metaphors and two visions of education—the factory vs. the creative agency. My hunch is that teachers and school leaders would almost universally agree that we hope our students are prepared to work in creative agencies rather than on assembly lines. Educators need to decide whether their technology investments are intended to speed up an old model of education or to fashion a new one.

Justin Reich is a fellow at the Berkman Center for Internet and Society, at Harvard University; a doctoral researcher at the Harvard Graduate School of Education; and the co-founder and co-director of EdTechTeacher, in Chestnut Hill, Mass., which works with teachers, schools, and districts to leverage new technologies. He also writes the ***EdTech Researcher blog*** *on edweek.org.*

Vol. 31, Issue 32, Pages 22-24