

# Learning in 140-character Bites

Twitter can  
improve  
teacher-student  
communication,  
in and out of  
class.

+ By DAVID ZAX  
+ ILLUSTRATION BY LUNG-I LO

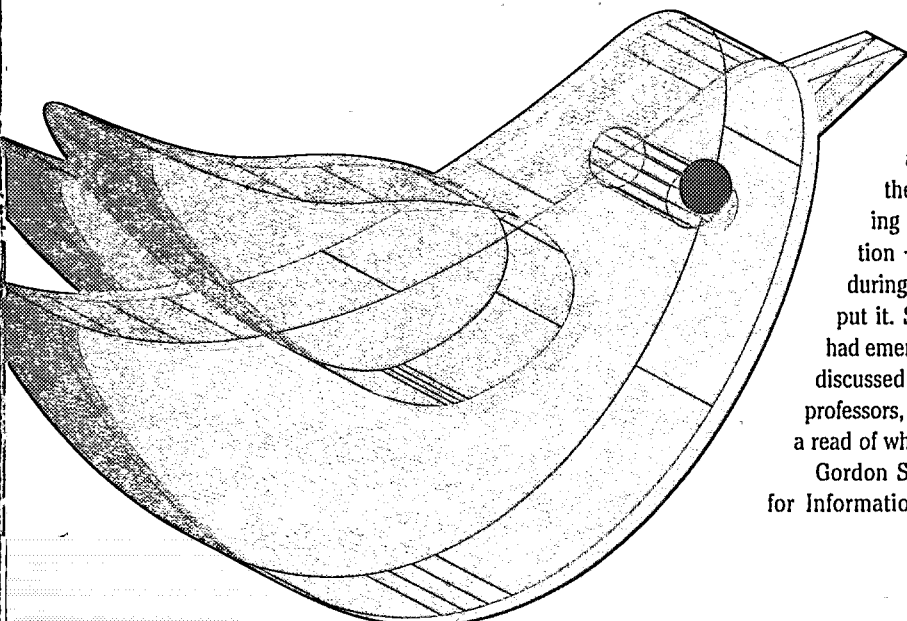
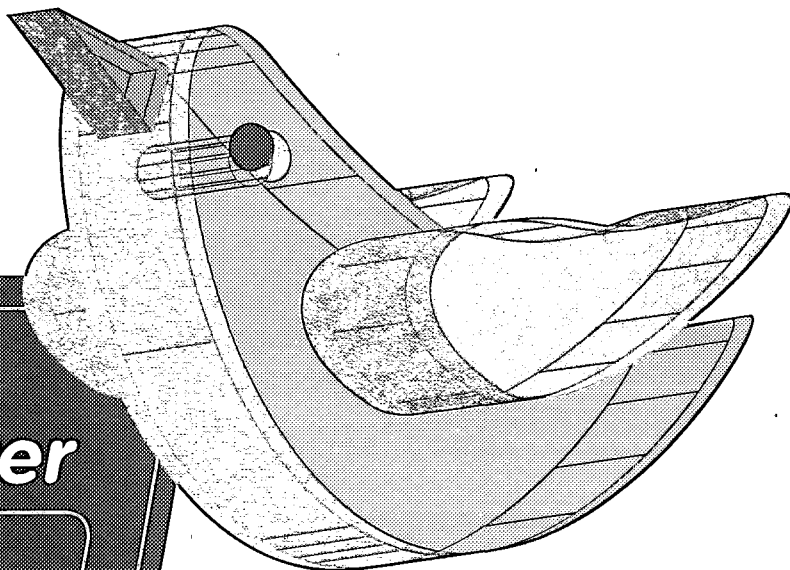
IN MOST RESPECTS, Prof. Natasha Neogi's aerospace engineering class is like any other. It's a large, hour-long lecture-style course at the University of Illinois, Urbana-Champaign. But at the halfway mark, Neogi's class takes on a new twist. She invites her students to log on to Twitter – the “micro-blogging” service that limits messages to 140 characters – and write in with questions. Neogi sifts through the “tweets,” in Twitter-speak, addressing the most common sticking point at the end of class.

Once widely dismissed as an instrument of vanity, Twitter is now showing up in serious places. Its citizen-journalistic role after last June's Iranian election was much celebrated; in May, a NASA astronaut became the first to tweet from space (“From orbit: Launch was awesome!!”). Bit by bit, Twitter is finding a role in education.

Of course, plenty of professors – engineering and otherwise – have long been using Twitter. They tweet about interesting links they've come across; they complain about their flight delays; they keep us updated on their cats. But there are also professors who, like Neogi, have begun to bring Twitter into the lecture hall or seminar room. And not simply to write, “I'm teaching a class right now.” Rather, they've moved beyond the tweet-as-status model to harness the organizational, aggregating, and social possibilities of the technology, recognizing it as a potent educational tool.

In the spring of 2008, well before Twitter acquired its current prominence, Scott McDonald and Cole Camplese of Pennsylvania State University at University Park co-taught a course called “Disruptive Technologies in Teaching and Learning.” They decided to experiment with the relatively new social networking tool, instructing class members to carry on a Twitter conversation – “essentially asking students to pass notes during class,” as the *Chronicle of Higher Education* put it. Soon, the professors found the Twitter feed had emerged as a rich “back channel” where students discussed what interested them or puzzled them. The professors, meanwhile, kept an eye on the feed, getting a read of what concepts needed further explication.

Gordon Snyder, who directs the National Center for Information and Communications Technologies



at Springfield Technical Community College in Massachusetts, has also experimented with the back channel. He assigned his class a “hashtag,” Twitter-parlance for a label to include in your tweets to make them easily searchable (they begin with the hash mark #). Students could thereby keep tabs on their neighbor’s notes and thoughts and even revisit them using Twitter’s search engine after class.

He also has found Twitter useful for getting a read on a room. Professors are familiar with the inscrutable sight of a lecture hall full of mute students. Are they listening? Understanding? Many professors have adopted “clickers,” polling devices used to quiz students on a topic recently covered or to gauge students’ opinions when venturing into politically sensitive subject matter. Snyder, whose center is funded by the National Science Foundation, considers Twitter a “modern and much more effective” clicker.

Of course, skepticism in academia remains the norm (“You mean as part of a class? Instead of students just wasting time?” a Massachusetts Institute of Technology official responded when asked for her take on Twitter). But Twitter evangelists have ready answers for skeptics. Does it erase a necessary distance between professor and student, eroding professorial authority? That depends on your view, says McDonald: If you think, “Well, I’m the teacher, and people just need to listen to what I have to say’... then Twitter is not useful for you.” Does Twitter distract students? “I see it as a way to keep students engaged,” says Snyder. Besides, some argue, students often are already using these technologies in class; professors are simply co-opting a tool that would otherwise serve as a distraction. “If you can’t beat ‘em, might as well join ‘em,” sums up Kathy Schmidt, director of the Faculty Innovation Center for the College of Engineering at the University of Texas - Austin.

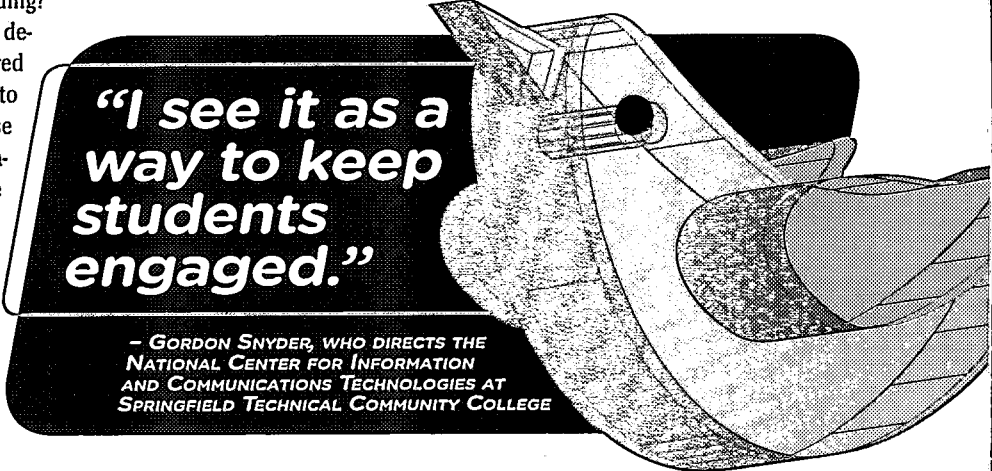
Still, Schmidt is the first to acknowledge that “sometimes turning our classroom into an experiment, per se, is risky business.” Professors should carefully consider what Twitter contributes before bringing it in, she says: “The pedagogy has to drive the reason for using the technology.”

## Danger of ‘Parallel Discussions’

PUNYA MISHRA, associate professor of educational psychology and technology at Michigan State University, notes that – despite his title – there is “no such thing as an educational technology.” Rather, “there are various technologies, and instructors need to repurpose them for their own needs.” Last year, Mishra tried integrating a micro-blogging service similar to Twitter into a graduate seminar, but “I felt two parallel discussions were going on, but they didn’t pull together productively at the end.” He spent the week considering what went wrong and then designated a block of time near the end of class for students to catch up on the contents of the micro-blogging feed. Afterward, the

class reconvened to continue a newly enriched discussion. With this bit of thoughtful tinkering, micro-blogging proved useful.

Mishra followed that experiment with a more ambitious one: using Twitter to join students from different continents. MSU is located in Lansing, Mich., but also offers a master’s degree for students in Plymouth, England. Mishra’s online “distance” course has content similar to the one in Michigan, so his local class and its British counterpart have recently been Twittering using a shared hashtag.



**“I see it as a way to keep students engaged.”**

– GORDON SNYDER, WHO DIRECTS THE NATIONAL CENTER FOR INFORMATION AND COMMUNICATIONS TECHNOLOGIES AT SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

He praises Twitter for “this ability to connect people.... The sense of community can be very useful and powerful.”

But just because Twitter has found success in some classrooms doesn’t mean it’s right for all engineering educators. After all, most of the experiments have thus far been led by professors of educational technology or social media itself – hardly a neutral or representative sample.

One common concern is that Twitter currently isn’t equipped to deal with engineering’s lingua franca: mathematics. “It’s hard to type funny symbols in Twitter,” says Michael Webber, a UT Austin engineering professor. Though an advocate for new classroom technologies, he doesn’t foresee using Twitter in courses heavy in equations and scientific formulas. “There’s something organic about a concept flowing from your brain to your hand to the board, and from the board to their hand and their brain,” he says. “Something about that process seems very valuable.”

Should engineering educators shun Twitter as a teaching tool, there are still other uses. MIT’s Nextlab, for one, has become a model of innovative Twitter use. By coupling micro-messaging with mapping technology, Nextlab has enabled Indian villagers to warn one other about floods and helped citizens of Caracas, Venezuela, to document crimes, locate them on a map, and share that information immediately with others.

If such innovative applications fail to interest engineers, Webber suggests that Twitter’s social networking still might come in handy. For some tech-savvy but shy engineers, Webber notes wryly, it’s “easier to get a date through e-mail or Twitter rather than normal mechanisms that humanity has developed over millennia.”

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SOURCE: ASEE Prism 19 no2 O 2009

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