

# High-tech gadget transforming college teaching - and learning

By Trish Wilson  
Inquirer Staff Writer

PHILADELPHIA - Freshman Sarah Speicher stared down at her syllabus in the bookstore at Temple University, considering her next purchase. "Clicker?" she asked out loud. "What's a clicker?"

A clicker, she soon discovered, is a "personal response device," a small electronic gadget the size of a slim calculator that she and her 399 classmates in Law and American Society would be toting to class.

The trendy, high-tech learning tool, used to take attendance, poll student opinion, and administer quizzes, is taking hold on campuses across the country, with an estimated two million college students now using them, transforming teaching - and learning.

"I think they are the greatest educational innovation since chalk," said Neil Sheflin, an associate professor of economics at Rutgers University.

The use of clickers, which can cost \$35 to \$45 apiece, is shifting education away from the age-old practice of putting a professor at the front of a room to lecture to a passive audience. Instead, it forces participation from all students and encourages peer learning. It is, as one pair of professors titled a journal article, like "waking the dead."

Michelle Benton, a junior at Gwynedd-Mercy College, said the format has let her know if she understood the material. "And you get to see where you stand in comparison to your classmates."

Last Tuesday morning, the first day Speicher would use her clicker, she filed into a large lecture hall at Temple and found a desk in the amphitheater. A *Seinfeld* rerun played on the cinema-size screen as students settled in.

At 8:10, *Seinfeld* faded out, and law professor Samuel D. Hodge Jr. popped the first question onto the big screen: "What year in school are you in?"

There were five multiple-choice options.

The students started clicking, while a small counter at the top of the screen scrolled the number of responses and a stopwatch measured the time. Within seconds, the transmitter in Hodge's computer - which collected the signals by radio frequency - spit out the results. They flashed on the screen: 66 percent were freshmen.

Students had registered their clickers online, so each click could be traced back to them. The clickers would count for about 7 percent of the final grade - reflecting participation in class polls and grades on clicker quizzes.

Then Hodge launched into the difference between common law, determined by judges, and statutory law, made by a government body.

A cartoon version of Eagles coach Andy Reid appeared on the screen, talking about whether fans who lost their season tickets should be given new ones, or have to pay for them. If there was no law on the books; it would be up to the judge.

Hodge told the students about a real case involving a Jets fan who sued after he lost his tickets and the team refused to replace them for free.

A clicker question popped up. Was the law on the fan's side?

"Who should win?" asked Hodge. "The fan or the team?"

The students started clicking. The counter scrolled the number of responses, and then a bar chart displayed the results: 75 percent of the students voted for the Jets.

"That shocked me," Hodge said later. "Usually, the students are consumer-oriented, but they did it on a business basis. They looked at the law. It was great."

## Like a game show

Hodge started using clickers more than five years ago in hopes of captivating the elusive attention of the college student.

Page: 1 of 3 [View All](#)

1 | 2 | 3 [Next»](#)

Recommend 2 people recommend this.



RON TARVER / Staff Photographer  
A Temple student uses a clicker to submit an answer in Samuel D. Hodge Jr.'s class. He started using them, he says, to capture students' attention.

1 of 4

[View image](#)

### Clicking the Answers

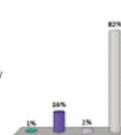
Colleges across the country are increasingly employing handheld clickers that students use to interact with lectures. The professor projects a multiple-choice question on screens in the classroom, and the students answer by pressing the appropriate key on the device. The responses are then calculated and projected on the screens.

At a recent class in Law and American Society, students learned about the Magna Carta, passed in 1215, which established the fundamental rights of people and is the precursor to the U.S. Constitution.

The students chose from four possible answers, and their responses are then displayed:

What happened in 1215?

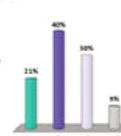
1. Last Eagles championship
2. The Spanish Armada
3. Temple University opened
4. Magna Carta



A student uses a clicker to submit an answer.

Students were also polled on their political positions: Politically how do you classify yourself?

1. Conservative
2. Moderate
3. Liberal
4. None of the above



SOURCE: Temple University

MIKE PLACENTINI / Staff Writer

### READER FEEDBACK

Post a comment

### RELATED STORIES

- ['The lecture is dead'](#)
- [See how the 'clicker' works](#)

# High-tech gadget transforming college teaching - and learning

"They're used to getting visual stimulation," said Hodge. "Not only do they want to be educated, they want to be entertained."

With a mix of video clips, amusing advertisements, animated figures, and clicker questions, he tries to continually assault their senses.

The clickers allow both Hodge and his students to gauge comprehension and gather opinions. Throughout class, Hodge marches up and down the aisles, calling on students and repeating their comments into his mike.

"It's like a game show," he said.

Sheflin, at Rutgers, says that by forcing participation from a sometimes somnambulant audience, clickers offer "proof of life."

"Clickers allow me to teach in pseudo-Socratic dialogue," he said. "I ask them something, and they are pushed to respond."

About 90 percent of his students like using the clickers, he said. "The majority find that it's a lot more fun and a lot more interesting and a lot less sleep-inducing."

Without clickers, particularly in large survey courses of more than 100 students, professors looking upon a sea of faces have no idea if students are listening, let alone learning.

"If I ask a question, and half the class gets it wrong, I can work on that right away, instead of waiting for a test," said Felicia Corsaro-Barbieri, a chemistry professor at Gwynedd-Mercy College. "The misconceptions are being cleared up immediately rather than later."

It also gives the usually silent majority a voice.

"It can be very intimidating in front of 400 people to raise your hand and answer the question," said Nicholas Staich, a Temple senior who is a teaching assistant for Hodge. "There is a security in anonymity. That ability to contribute without having to worry about people laughing at you is something that most students have never seen before."

## Like broccoli

At Ursinus College, all students taking this year's general chemistry class are using clickers for the first time, after the physics faculty persuaded the chemistry professors to try them out, said Eric Williamsen, an associate professor of chemistry.

One key to using the technology is to encourage student discussion. After a clicked answer produces mixed results, students are told to work out the problem with their neighbors for a few minutes, and then are asked the question again.

So far, research shows that the sequence works. Students do better the second time around.

Douglas Duncan, an astronomy professor at the University of Colorado in Boulder and author of *Clickers in the Classroom*, predicts clickers on campus will eventually be as common as cell phones.

"Clickers will be here forever," he said, because they eliminate embarrassment, provoke interaction, and ultimately improve learning.

"There is a big cadre of students who say, 'Do I like them? No, but I know they're good for me.' Sort of like broccoli," Duncan said.

In earlier incarnations, clickers were hard to love: Entire classes and quiz scores would collapse due to technological problems. And on many campuses, students had to purchase different brands of clicker for different classes, though colleges are now standardizing so one clicker can be used for all four or five years of college.

Finally, the existence of a clicker means classes cannot be skipped without penalty, unless students can get a classmate to take a clicker to class for them.

Page: 2 of 3 [View All](#)

[«Previous](#) | [1](#) | [2](#) | [3](#) | [Next»](#)

  2 people recommend this.

Posted on Mon, Sep. 13, 2010

Page: 3 of 3 [View All](#)

# High-tech gadget transforming college teaching - and learning

Professors are on to that.

"I will usually send them an e-mail reminding them that that is an academic-integrity violation. And that fixes it," said Daniel King, an assistant chemistry professor at Drexel University.

At Colorado, clickers have been credited with helping to increase learning gains in the physics department over a 10-year period, Duncan said.

"We don't just say clickers are better because they look cool," he said. The combination of clickers and peer instruction changes behavior and puts more responsibility for learning onto the student.

"They can't just sit back, flip open their laptop, and look at Facebook while the professor is talking," Duncan said. "Because the professor isn't talking.

"They are talking."

---

Contact staff writer Trish Wilson at 610-313-8095 or [twilson@phillynews.com](mailto:twilson@phillynews.com).

Page: 3 of 3 [View All](#)

[«Previous](#) | [1](#) | [2](#) | [3](#)

 [Recommend](#)  2 people recommend this.