



## Clickers Offer Instant Feedback in the Classroom

BY KELLY HEYBOER  
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Students use remotes to answer questions projected on a screen at William Paterson University in Wayne, N.J. SEE "INTERACTIVE-CLASS" (Photo by Jerry McCrea)

In the middle of his review of the human immune system, biology professor Martin Hahn stopped to gauge whether the 100 students spread across the vast lecture hall were keeping up.

With a click of a button, a question appeared on the movie-theater-size screen above the blackboard:

The decline in the death rate from AIDS in the U.S. is a result of:

1. development of a vaccine
2. antiviral treatments
3. disease has become less contagious
4. disease has become less virulent

Like contestants on a game show, the students in Hahn's human biology class at William Paterson University quickly selected answers from their seats via hand-held remote controls as a 10-second timer counted down. The professor nodded when the big screen showed 81 percent of the students chose No. 2, the correct answer.

"Most of you got it right -- antiviral treatments," he said. "If you're doing very well on these, you should do very well on the exam."

Hahn's class was the first on the Wayne, N.J., campus to experiment with clicker technology, a new gadget gaining popularity at universities. The highly touted systems promise to finally bring the lecture course, a teaching method that dates to the birth of higher education, into the 21st century.

"It's really the interactive classroom that we like to see," said Heather Reid, a marketing specialist with Maryland-based GTCO CalComp Inc., a leading manufacturer of the classroom systems. "Even in the short term it gets students into the class. They're more engaged."

Nearly 300 colleges and school districts -- including Columbia University, the University of Pennsylvania, the University of California at Berkeley and Duke University -- are experimenting with the technology, according to GTCO CalComp.

eInstruction Corp., the Texas manufacturer of competing products, lists 600 colleges that have tried its clicker systems in the past few years, including Princeton and Rutgers universities.

The devices are similar to TV remote control. Infrared sensors pick up students' answers as they punch buttons on their clickers. The data are fed to a computer, which instantly tallies responses. The professor can display responses on a screen, post them on a Web site or save them for reference.

The responses normally are anonymous, though professors could link answers to students by serial numbers in each transmitter. The system can be used to administer multiple-choice tests and to take attendance.

But developers of the technology say the main benefit is helping professors instantly gauge whether the class understands a lesson. They give every student a virtual voice in cavernous lecture halls where undergraduates can easily go an entire semester without asking a question.

Casey Kerr, a senior radio/television and film major at William Paterson, said the clicker helped her participate in a lecture class where she probably would have been a silent observer.

"I sit in the back; you raise your hand and you never get noticed," Kerr said.

Most students in Hahn's class said they liked the interactive feel of the clicker, but some William Paterson students also complained about the cost of the systems. Students purchased a package containing the clicker and two required texts for \$140.

"It was expensive and we only need it for this class -- \$140 is a lot of money," said Erica Mauriello, a junior communications major.

William Paterson students had the option of purchasing their textbooks without the devices. But 95 percent purchased the equipment, the professor said.

Prices of the systems vary, based on the deals manufacturers and textbook publishers make with college officials. On some campuses, students purchase clickers with their books and are free to use the equipment in multiple classes. At other schools, the college owns the clickers and hands them out in each class.

Hahn said he believes the system's benefits outweigh the costs. After nearly 30 years teaching the same lecture hall biology course, he thought the clickers could revolutionize the way professors approach large classes.

"It had a lot of potential, especially in a class like this," he said.

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