

# New technology, innovative teaching enhance non-majors biology classes at Ole Miss

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A University of Mississippi professor is making science more accessible and interesting by using clickers and the case study approach.

Tamar Goulet, assistant professor of biology, uses small remote control devices called clickers to give daily quizzes in her non-majors Biology 102 classes.

Goulet projects questions onto a large screen from her laptop, and students respond with individual clickers, relaying answers to a radio transmitter. The computer then displays a graph with the percentage of correct responses.

Aeryal Herrod, a junior elementary education major from Grenada, said she prefers clicker quizzes over written ones.

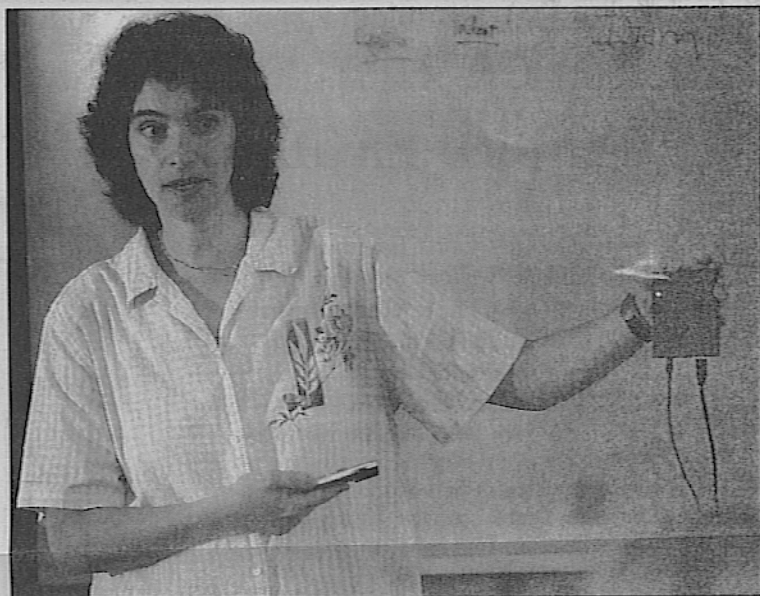
"The daily quizzes help me to make sure that I studied the material," Herrod said, "and I find it easier to keep up."

In large introductory classes with over 100 students, regular evaluations provide Goulet and her students with important feedback.

"With clickers you don't have to wait until exam time for assessment," Goulet said. "If 60 percent of the class responds correctly, you still explain the answer, and then you move on. But if only 20 percent gets it right, you will want tackle the issue from another angle."

Since implementing clickers and daily quizzes three years ago, attendance in Goulet's classes has remained at or above 85 percent throughout the semester. Before clickers, attendance was dropping to 65 percent at mid-semester, a common occurrence for all instructors of BISC 102.

"Clickers don't make you a better teacher," Goulet said, "but they allow instantaneous assessment in class, giving you data to constantly improve your teaching methods."



NATHAN LATIL/UM

**Tamar Goulet demonstrates the use of clickers with radio transmitters for a quiz in her Biology 102 class.**

Goulet is also improving her teaching methods by using the case study approach. With this teaching method, students read scientific cases and use deductive reasoning to answer questions about biological issues.

In October 2005, Goulet received a \$93,000 grant from the National Science Foundation to research case study teaching. She wants to determine if teaching biology with case studies is more effective than the traditional lecture style.

"The case study method uses stories, which I hope will make the subject matter more exciting," Goulet said. "In this way, students become more active participants in their education."

Murray Nabors, chair and professor of biology, believes case study teaching can be beneficial because it makes biology more approachable for students, especially non-majors who can be "terrified of science."

"The idea is for you to get students' attention and show them the reason for learning," Nabors said. "The case study method tells a story that relates to the textbook's chapter."

In May, Goulet hosted a regional case study workshop sponsored by the NSF and the Office of the Provost. Clyde Herreid, distinguished teaching professor at the State University of New York Buffalo and director of the National Center for Case Study Teaching in Science, traveled to Oxford to help direct the workshop. The week-long conference brought together professors from Alabama, Georgia and Mississippi who learned how to use case studies in the science classroom.

"The idea of this workshop was not to convert teachers to the case study method, but to expose them to it," Goulet said. "You can consider it another tool in your teaching belt."

Biology graduate student Cameron Johnson helped coordinate the workshop.

"I think the conference was a great idea," Johnson said. "The case study approach is more interactive and explains the relevance of facts. It helps you to be more dynamic in the classroom."

For more information about clickers, visit [www.gtco.com](http://www.gtco.com).