University of Michigan
Provost's Teaching Innovation Prize

2011 WINNER

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Infusing Technology for Guided Continuous Learning in a Large Gateway Course

Innovation Description

By carefully selecting and interweaving technologies, instructors can guide large groups of students through challenging material in a way that feels highly personalized. The 1,500 students who enroll in *Statistics 250* each semester eagerly engage with a suite of technologies that gives them multiple paths for developing, practicing, and testing their understanding of concepts and relationships.

SMART Presentation Tools: A tablet PC allows the instructor to make the problem-solving process transparent and guide students to see connections to earlier material.

Lecture Capture Technology (UM Blue Review): Students can review recorded material multiple times.

Clickers: Difficult questions are paired with peer discussion.

PreLab Video Wrappers: Brief videos made with Jing teach a software feature or introduce an online learning resource.

Online Homework + e-Textbook: Assignments link to the relevant section of the e-textbook. Paperless homework is submitted automatically and returned quickly with tailored feedback from GSIs.

GTD™ Lists: Posted weekly, the Getting Things Done list itemizes what students can do to be better learners.

Together, these technologies let students discover new ways to understand the material. They can receive appropriate guidance both inside and outside the classroom, so that their learning is continuous, not a set of stop-and-go chunks. This innovation is flexible and readily extendable to many large gateway courses at our university and beyond.

Student Comments

"The integration of technology in the classroom helped make the class feel smaller and more manageable."

"The pre-lab instructional videos, along with the multiple applets really help you to visualize the concepts."

The extensive online homework assignments are "convenient to access and require you to both mathematically and visually demonstrate the knowledge we learn in class."

iTunesU "gives me instant access to explanations of difficult content, a sort of 'on-demand' office hours that helps me better prepare for exams."

"The many technologies [used] nicely complement each other, allowing students to quickly grasp key concepts and make concrete what before seemed abstract."

"Notably, the online homework tool allows graduate student instructors to provide feedback on individual responses, [commenting] on what error students made in their logic and how to think about the question in the future. I find this immensely valuable, as it allows students to quickly identify and understand their mistakes."

"Lecture teaches how to apply an equation to a problem. Lab teaches us how to make the computer do it, and our online homework mixes the two."

Examples of Teaching Innovation