

New report shows college students making the grade online, in class

The lives of today's college students have always included computers and the Internet. That technology now has moved from the ether into instruction.

A technical report from a University of Houston Department of Health and Human Performance researcher finds that students in a “hybrid class” that incorporated instructional technology with in-class lectures scored a letter-grade higher on average than their counterparts who took the same class in a more traditional format.

Brian McFarlin measured the student involvement and academic performance of a traditional class—Kinesiology 3306—from fall 2004 to fall 2005. He compared those measurements with those of students in the hybrid class, offered as an alternative from summer 2006 to fall 2007.

“One reason we offered the hybrid class in the first place was because students said they wanted it,” said McFarlin, a researcher and assistant professor. “Their formal evaluations of the class indicated the traditional class didn’t take advantage of instructional technologies available, and that these technologies could give them additional help and access to course material outside of class time.”

Hybrid classes are growing in popularity and practicality for students and professors, at UH and on campuses across the country, because of the presentation of material and the accessibility and flexibility to students. For example, an upper-level business law and ethics class in the UH Bauer College of Business reaches more than 1,000 students each academic year because of its flexible, hybrid offerings.

In addition, the UH Graduate Futures Studies has been experimenting with hybrid classes for the last five years. Houston students attend class in classrooms, but students as far away as Australia also take and participate in classes. To date, there has been limited literature addressing the effectiveness of such classes, McFarlin said.

McFarlin’s traditional kinesiology class met twice a week for a 90-minute lecture in a large auditorium. He used Microsoft PowerPoint slides with Flash media to present course material. He reported that, as is customary in large auditorium classes, interaction was minimal between students and professor.

His hybrid class met once a week for a traditional 90-minute lecture, but augmented the lesson with various forms of instructional technologies. The second lecture each week was administered by WebCT, an online venue for students to review course material. An animated character of McFarlin—an interactive SitePal avatar created by OddCast of New York—welcomed students to the site and provided class announcements. In addition, McFarlin

narrated material for upcoming lectures using Articulate Studio software, so students could prepare for the next class at their own pace.

“One major advantage of the Articulate software is that it enhances the appearance of standard PowerPoint files by allowing the course designer to add self-test questions, provide a search function and a navigation menu,” McFarlin said. “Once students completed the online lecture, they were required to take a WebCT quiz on the material. The majority of students scored between 90 and 100 percent.”

In the classroom, students of the hybrid class used a remote control-looking device called a “radio frequency in-class response system.” They purchased these devices on campus as part of the class

requirements. At the beginning of class, students were asked exam-like questions about the previous lecture and used the device to select the answers. At the end of class, they answered questions regarding the lecture they had just heard. The devices recorded their responses and let McFarlin know which part of his material needed more explanation. The technology also kept track of attendance.

“Final grades in the hybrid class were on average a letter grade higher than those in the traditional format,” McFarlin said.

“Students could choose a content delivery method that matched their style, so we believe they were better able to comprehend the material.” In addition, comments in evaluations indicated students preferred the self-paced nature of the hybrid class.

Future hybrid classes would provide a “frequently asked questions” feature, hosted by an animated SitePal avatar, McFarlin said.

Beyond the improvement of student grades, McFarlin believes that hybrid courses can benefit large college campuses struggling with space management issues.

“For instance, in the present hybrid course, we only needed to have access to a classroom for one and a half hours a week,” he said.

“That means two courses could be taught in a classroom that would normally be dedicated to one traditional lecture course.”

McFarlin admits there are some shortcomings. Online instruction doesn’t allow the instructor to confirm the identity of a student completing an assignment. He notes that creating the online course material is time-consuming, especially when implementing various technologies. Still, his student’s success prompted him to offer Kinesiology 3306 only in a hybrid format.

“In the end, I have expanded my own instructional capacities and provided a better learning experience to my students,” McFarlin said.

“The key to success with instructional technology is to keep the focus on student-related outcomes and learning. This was my objective.”

The findings are published in the journal “Advances in Physiology Education” and can be viewed at <http://advan.physiology.org/>.

Source: University of Houston

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