OFD Innovation in Teaching Award Application

Name: Eileen Carreiro, Professor
Department of Medical Laboratory Science
Dion 216 E ext: 8213 email: ecarreiro@umassd.edu

Teaching Innovation:

Improving iClicker™ Use in Student Engagement and Learning

During a previous semester (Spring, 2009) iClicker™ (UMD's individual student response system) use was introduced as a method of tracking attendance and improving student engagement and learning in a sophomore MLS theoretical analytical instrumentation course (MLS 241) of approximately 50 students. Assessment of the student's performance, after that class was completed, indicated that, while the student's liked iClicker™ use, their performance on hourly and comprehensive written final examinations showed no improvement, and in fact, was slightly lower, which was a surprise given other academic indicators for this group of MLS majors and the belief that student interaction and engagement improves learning. While iClicker™ technology is effective in tracking attendance, does their use in this type of technical course improve learning?

To further test the effectiveness of their use, iClicker™ technology was incorporated into another technical class taken by the same group of students during Spring, 2010 (MLS 341) and a new group of students in the MLS class (MLS 241). However, design of iClicker™ questions were more closely matched to topic learning objectives through the use of rubrics in all learning domains and testing levels (recall, application, problem solving). This required extensive pre-planning and examination coordination.

Learning Outcomes:
Students using iClicker™ technology should be able to:

- put lecture material immediately into practice for better feedback
- demonstrate improved learning through active participation in class
- use feedback from iClicker ™responses to gauge their understanding of lecture material
- demonstrate improved understanding of key concepts as measured on written tests and other graded work. It should be noted that MLS students will need to pass written licensing and national certification examinations in order to enter their practice field.

Projected results:
Better utilization of iClicker™ technology should improve learning. Student engagement using iClicker related questions keep them on task during lecture-formatted classes is important. However, more closely linking the questions to the course learning outcomes and objectives, while being sure to include varying levels of difficulty, should provide students with an improved learning environment. It also may serve to identify areas of weakness where they may need more discussion, additional practice or questions. Data will be gathered once all graded work has been completed. (End of May, 2010)

Sustainability:
iClicker™ technology receives good support from the Computer and Technology Office. Linking these classroom activities with careful analysis of other shared learning course outcomes provides stimulation for all types of learners. Generation and implementation of learning objectives rubrics with iClicker™ activities can be shared between faculty teaching similar type subjects.

Potential for Replication:

Excellent. This activity could easily be reproduced for use with other faculty either through electronic means, workshop, presentation, or round table discussion. It could also serve as a model for different disciplines wanting to implement iClicker™ technology in their classroom. At a recent Faculty Senate General Education discussion, it became clear that faculty might not easily differentiate between establishing learning outcomes, learning objectives, and classroom activities.
Using iClicker™ technology and development of the associated question/activity rubrics, could foster such discussions.