2000 ACS Mellon Technology Fellowship

Integrating WWWeb-based Technology into a Cell Biology Course

Karen Bernd

Using the web to deliver pre-class exercises can be a strong pedagogical tool. It encourages consistent student preparation and allows class time to focus on areas where the students are actually having difficulty rather than where the professor thinks they might be struggling. During this fellowship I developed a series of lab 'quizzes' used in conjunction with my Cell Biology Course. Each quiz requires students to analyze data that they gathered the previous week and also asks questions about the background reading and basic laboratory methods for the week that is approaching. After an initial catastrophic attempt to deliver the materials via a different program students now access the quizzes through the Blackboard online portal system (www.blackboard.com). Each quiz becomes available after the week's labs have met and 'disappears' at least 24 hours before the next lab meeting. The online system provides many advantages. Students can access the material at times that fit their schedules and they can work at their own rate. Unlike 'paper quizzes' grading of fill in/multiple choice portions is automated so they get instant feedback. (I grade the short answer questions) The timing of availability requires that the students have read, thought about and responded to the material well before the meeting time. The timing also lets me know where their strengths and weaknesses are, while I still have time to adjust my lesson plan.

Course-testing of the approach resulted in favorable feedback from students and myself. Students commented that they felt more prepared for the laboratory sections than they had in some other courses and that the instant feedback was 'a definite plus'. I had used 'paper quizzes' at the beginning of lab in the past but had found that students did not take them very seriously and often were skimming the material for the first time minutes before lab. Something about the delivery system and the due date seemed to carry more weight and using the Blackboard approach I noted a distinct different in the level of student preparedness. By having the information provided in graded, tabulated format I could better focus my introductory lectures. In some areas it allowed me to get to some of the deeper levels of material and in others I learned that they needed me to back up and review. Also, the lab requires students to design experiments each week and, even though the quizzes did not ask for experimental design, students were more familiar with the material and worked together to set up their experiments more quickly. This was a pleasant byproduct as it meant the entire session ran more smoothly (and took less time). Overall the approach was successful and is being used again.