Paul Capaldo-Half time lecture, Biology, 10 years Teach Biology 101 for non-majors

Project - Using PRS (Personal Response Systems) aka clickers

Before you can changes students' opinions or attitudes regarding certain biological topics, you have to identify them.   The PRS technology has proved very useful in this capacity.
Before introducing a specific topic, the students are polled for their opinions.   Then, again after the unit, a post survey poll is conducted.   By using, PRS, these assessments can be conducted quickly with a minimum of effort on the instructor's part while at the same time providing immediate assessment of learning outcomes.
As an example, before beginning discussion on the topic of genetically modified crops, the students are asked if they consider GM crops to be hazardous to their health and/or the environment.   It is not uncommon for greater than 50 per cent of the class to respond in the affirmative.   However, after the unit, student's opinions often display a significant shift, with a majority now believing that GM crops are not hazardous

These forms of pre & post surveys not only provide assessments related to attitudinal changes but, they engage the students in the topic (give them some 'ownership').

The PRS technology is as versatile as the instructor's imagination. It can be used for assessing student attitudes & preconceptions, as well as student content and conceptual understanding. Because the assessment is immediate, it allows the instructor to address problems in a timely fashion, rather than discovering the deficiencies on the day of exams.

Sustainability - I have been using Power Point as my instructional format since I began teaching at the university in the Fall of 2001.   I believe I was one of the first instructors to incorporate PRS technology (Fall 2003). Since I teach the Biology 101 course with a strong emphasis on current events and relevancy, I make changes to the Power Point presentations on at least an annual basis.   However, these changes require only a minimum of time and effort.   Adding additional PRS questions or making changes are as simple as the click of a box.   Consequently, this pedagogy is highly adaptable and sustainable.

Demonstrating learning outcomes – Since the pre and post surveys are so easy to generate and administer, I use them frequently to ascertain changes in student understanding and/or student perceptions.   Because the results are stored as separate documents, they can be retrieved as necessary.

Currently, I am conducting a study to demonstrate if the PRS technology actually improves student learning. Since I teach multiple sections of Biology 101, I can use one section as the 'experimental' group and another as the 'control'.   Based on the results to date, there is some empirical evidence that the use of PRS technology does improve student retention as a gauge of student learning.

Anyone using Power Presentation as their primary teaching tool, could easily incorporate the PRS software.   The software is very 'user friendly', and can be incorporated into instructional format with a minimum of time and effort.