**December, 2001 - Richard P. Petriello, Biology**

"The true aim of everyone who is inspired to be a teacher should not be to impart his own opinions, but to kindle minds." (Frederick William Robertson, English Clergyman)

Reflecting back on thirty-one years of teaching is interesting and scary. Teaching is a series of constant challenges:

-how to get students involved in understanding the importance of why they are in college.

-how to get students to appreciate love of learning.

-how to stimulate their creativity.

As Horace Mann stated: "The teacher who is attempting to teach without inspiring the pupil with a desire to learn is hammering on cold iron."

Henri Frederic Amiel, the Swiss philosopher, stated: "The highest function of the teacher consists not so much in imparting knowledge as in stimulating the pupil in its love and pursuit."

How to inspire, how to get students involved, and how to get students to want to learn are some of the challenges all teachers face. As many of my colleagues have said, teaching is an art - not a science. Every class that I teach enables me to develop professionally by continually interacting with students. It is my students who inspire me, challenge me, and encourage me to be creative.

In my field of biology, part of the challenge is to communicate how biology can serve as the core of a strong liberal arts education and prepare students for a wide range of ever-changing careers. Another challenge is whether courses for non-majors adequately prepare students for citizenship in a democracy that depends increasingly on science and technology.

Like many of my colleagues, I have used different pedagogical techniques including lectures, journals, multi-draft papers, computer simulations, problem-solving exercises, research papers, etc. Probably my favorite technique is the use of microthemes. These are short writing assignments - usually two to three pages in length - that allow students the opportunity to explore and analyze various problems. The assignments are intended to challenge and stimulate the creativity of the students. These short writing assignments, which are allied to topics covered in the course, allow me to learn about students' writing style and their creativity, to see if they are comprehending the concepts covered in class, and to enable them to integrate knowledge that hopefully they have learned from other core courses.

Three of my favorite microthemes are:

-Explain how the concept of a gene would be explained by Mendel, Morgan, and a modern day Molecular Biologist.

-How would Plato, a medieval scholar at Oxford, and a modern scientist differ in the importance each places on the role of rational processes, observation, and received wisdom in the study of nature?

-Given the following debate: A bioethicist argues that science's domination of the cultural landscape unreasonably excludes other ways of understanding nature and the world and sets it above any need to accept moral, social, and intellectual judgment from political, religious and even traditional values. A biologist holds that science is "free of the main vice of religion, which is faith" because it relies on evidence and logic instead of tradition, authority, and revelation. Analyze these two statements. With which position do you agree or disagree? Explain.

These microthemes integrate concepts learned in my courses with knowledge garnered from core courses. I can use the questions with majors or non-majors. My goal is to have the students express themselves and show them that education should not be compartmentalized. Interdisciplinary courses are excellent venues for using these questions.

One must remember that the classroom environment has an impact on student learning. It is important, therefore, to engage the students in the learning process. It is often difficult to assess the degree to which the students are learning. How does one evaluate performances? How can we relate what students are learning to their own lives?

Part of what makes teaching exciting, even after thirty-one years, is to determine what works best with each class. Often what works well with one class many not work with another. At times this can be daunting and frustrating and at other times, challenging and rewarding.