

Teaching and Learning: Freedom to Roam

By Cheryl A. Lindeman

As a veteran teacher at a NCSSSMST high school, I take pride in allowing my students to stretch their minds. But as a teacher of gifted juniors and seniors, it has always been a challenge to keep my students up to date with key events in science. How do you keep bright minds ready for action? Can you develop their thirst for knowledge informally, i.e. without developing classroom experiences?

When we teachers first introduced the World Wide Web into our lessons, the buzzwords were web surfing or web quests. This worked fine and helped us bridge the gap with the information age as it swooshed into our classrooms. Now our students are coming to us in high school with a very comfortable attitude about surfing the web. But, as we all have found out, their skills are not at the higher orders of Bloom's Taxonomy. If a web site doesn't have a cool video or graphic, they might not go past the home page. So, it is a challenge to get them "data mining" into web pages to uncover deeper understanding about a topic.

With wireless technology my students can log on to their laptops at any time. Since I decided that my seniors needed to practice their own policing, I allow them to have computers on during our class discussions. For example, sometimes they will make a concept map of our discussions or I'll ask them to type in a topic and see what Congress is doing with the issue.

For my biology lessons, I tend to do my advance searching on topics and see if I can stump them. This fall during my traditional discussion about DNA, I made sure the students got very familiar with Cold Spring Harbor's Web site < <http://www.cshl.edu/> > and the DNA Learning

Center < <http://www.dnalc.org/home.html> > . (I call it "one stop shopping" for uncovering the latest as well as the historical information about DNA, genomics etc.)

I went on to share my first-hand experiences about going to Cold Spring Harbor Laboratory and meeting James Watson. In the old days I'd bring out my 35 mm slides and share the experience. Instead, I asked, "So what is James Watson doing today?" A few students had some ideas and then a student in the back of the room was scowling over his computer. The rest of the class continued talking and sharing information. The student in the back was really scowling now. So I walked around and looked. He found Watson on YouTube giving a lecture. The student had earphones hidden and was listening to the talk. I stood at his chair and then he announced. "Yes, Watson does have a "slirp" in his speech!" Everyone turned around as he took his earphones out and turned up the volume on the computer. Watson's mannerisms were exactly as I had described them to the students. The student created his own learning space while we were deep in discussion. He didn't bother us but he found a great talk by Watson as everyone listened to it. One young lady muddled as we finished. "Gosh, it was nice to hear someone famous the moment we talked about him—isn't YouTube Great!"

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