Wahtonka High School Site Visit

September, 2001
Ch. 36 Version 1

The Facts

Wahtonka High (Chenowith School District) in The Dalles, Oregon (80 miles east of Portland)
Teacher: Debi Ferer
Attended NSTA 2001 Workshop
Class Schedule: 2 classes, one block (90 min) schedule and one normal (45 min) schedule
The Students: 20 students in each section, arranged in groups of four at tables. Wahtonka High students are low-midrange (roughly 30% of Wahtonka grads go on to college or university)
Textbook: Glencoe (the Whale) – has used for 6 years
Site Visit Dates: 9/10-11/01
Computer Equipment: Debi's classroom has 1 teacher computer, 5 Desktop pc's (along one wall of the room) and 5 Toshiba laptops with wireless connections. So there are 10 computers with internet access for students to use during class. Debi also has a Mimeo Digital Assistant, with wireless keyboard and mouse, which can turn her whiteboard into a computer screen. She also has a Flexcam for hooking up to her microscope.
Biology Program: Debi is the only biology teacher at the school, two sections a year, no AP Bio

What Happened

I observed each of her classrooms twice. They had just started their ecology unit (Debi teaches an ecology-first organization) and were working on The Biosphere chapter when I arrived. Debi taught using the EL cell respiration chapter last spring but this was her first time through with the EL CH 36.

On Day 1, students in her 45 min class had some background and instruction and then tried the WebQuest. They spent roughly 20 minutes on it and most didn't make it halfway through the activity. Her plan had been for them to complete the WQ and concept 36.1 in this class period.

Students in her block schedule class had already done the WQ and were now moving onto 36.1 and preparing for the lab which they would do the following day. All students made it through 36.1 but, for most of them, it took 30-35 minutes.

On Day 2, the 45 min class met in the library to watch the television news in light of the terrorist disaster. No official classtime.

The 90 minute class did the "You Are a Pond Organism" laboratory. They spent the first 20 minutes of class time reviewing the concepts covered so far. Then they spent the next 15 minutes reviewing the instructions and preparing to do the lab. They spent 45 minutes

working in pairs on the procedure itself. They spent roughly 10 minutes at the end cleaning up.

Observations

- The activities are taking them too long. This is particularly noticeable on concepts that are relatively straightforward (like 36.1 – abiotic factors) where the concept does not merit 20-30 minutes of class time. We should consider setting upper limits for the time on task, in relationship to the importance of the concept to the overall chapter. We should keep most activities to no more than 3 or 4 screens. We should also keep the number of self-assessment questions at the end of each activity down to just 3 or 4 questions.
- The WQ are also taking too long. Ideally, these should be able to be completed in 25-30 minutes. We should consider limiting the number of questions we ask students to research.
- Logistical problems abound! Students working in pairs at a computer with not enough room between them, no where to write or no surface on which to place a book or a notebook; most of these students couldn't type which really slowed them down on the self-assess questions; problems remembering log in IDs and passwords; different types of computers in the class with different download speeds; broken links; and the implicit problem of working in pairs (or in small groups) where one person is doing all the thinking/work while the other(s) are along for the ride.
- I was reminded again of students' general apathy and disdain for biology. They take great pains to demonstrate how boring they find it all, how confused they are, how far beyond them this science is, and how very much they'd like to be somewhere ELSE.
- The students give up on the question if it's too difficult to answer.
- Ecology first organization points to some issues with concepts and terminology that should be pointed up in the TE material (e.g. autotroph and heterotroph, chemical cycles)
- The lab activity went very well. I passed along a number of specific suggestions to Diane but overall, it was a big hit and the students were able to follow the instructions and do the lab with good results in the required period of time.
- Students are very impatient with reading on the screen – skip over it or just scan it lightly
- When asked whether having access to the book online would be helpful, they mostly said "yes"
- Students had no trouble navigating with the program and were not at all confused about the structure of the website. They also seemed to get the connections between the book and the site.

Debi Ferer's Observations

- Doesn't feel comfortable assigning web-homework – at least nothing that's due the next day. Feels she would always have to give the students a week to complete to insure access.

- Things that some of the activities are "a bit too long" and recommends shortening in general and especially those that are for "light" concepts.
- Also suggests doing whatever we can to reduce the amount of scrolling the students have to do on the screen
- She likes the idea of a homework book – she wants to be able to check in on a students' self test items (just to know they've done it). As she puts it, "I want access, not a deluge". Debi suggests offering the Homework Book as blackline masters (pdf) and she could print them out as handouts.
- Her main reason for satisfaction with the Glencoe book is that they have a CD to accompany the book (with limited activities) and they have the entire book available on cassette tape in English and Spanish (this is a big advantage for her ESL kids).
- The NSF grant program has worked very well for her. She was very complimentary about how organized the Lehigh group is and how attractive and easy to use the materials were. Her only complaint was the onerous ness of the paperwork – particularly the permissions slips which she's found it very hard to extract from the students.
- Debi suggests thinking of the "Intel Teach to the Future" program as a possible model to train teachers with our program. Intel identified roughly 100 teachers in each state to become "mentor teachers". They were training and each given $10k in equipment grants. The participating teachers agree to three year commitment and after they've incorporated this new technology in their own classroom, take on the workshops to teach other teachers. In this way pilot teachers become mentors. She says that it has worked very well in their state.
- Debi encourages us to develop more "blue sky" activities on the website that require collaborations, students working with students elsewhere in the world. She sees that as a very powerful thing and that most of her job is just getting the students to show one small spark of interest – collaboration like this would most likely do it.

Specifics on Chapter 36 Online Activities

- Probably a bit too much on the Alvin in the WebQuest (dimensions, how many people can fit etc)
- Abiotic factors activity (36.1) just doesn't work. Too much flipping around, can't remember what the original picture looked like after it changed, don't know what the organisms are so hard to refer to them, some students picked up the misconception that all of this change could happen over the course of one summer, seems as though roughly the same organisms die off for each abiotic factor (the subtle differences are not observable); and they focus in on the animals and don't even notice the plants.
- One student had gone on to look at the other activities for the chapter and was very positive about 36.4 – it was fun to do and seemed to hit the target on learning the concept (he was able to describe it back to me in his own words)

Take-Home Lessons

- Find ways to shorten the time on task for the online activities. Work to set benchmarks for level of complexity, time on task, importance of the concept to the chapter.
- Let's not forget all the logistical headaches and do whatever we can to address them in the teacher's material
- Consider the Intel "Teach to the Future" program as a possible model for training
- Homework book is a good idea – offer it multiple ways – as a print book, as pdfs, as blackline masters for the teacher.
- Importance of some blue-sky activities to the overall program.