

Exploring Life Field Observation #5

Submitted by Betsy Price

Teacher: Deborah Ferrer

School: Wahtonka High

Location: The Dalles, Oregon 97058

Dates: May 14 and 15

Number of observation days: 2

Number of classes: 2

Classroom characteristics:

Number of students: class 1- 20 students

Class 2 - 13 students

Level of students: class 1 - regular level biology

Class 2 - lower level students

Ethnic mix Class 1 - 4 Hispanic, 1 Asian-American, 15 Caucasian

Class 2 - 5 Hispanic, 7 Caucasian

School socioeconomic level: rural middle to lower middle class. Hispanic came from migrant families.

Length of class period: 90 minutes - block scheduling

Number of computers: 5 PC 4 -48X 1- 40x speakers for sound

5 laptops linked via airports with sound

One smart board with computer

Computer setting: In classroom. The students used the computers in the classroom. Six were permanent and 5 were checked out from the library.

Internet connection: The infrastructure for networking the computers was paid for by a district bond levy. There is some money for maintenance of the original computers, but not for new equipment.

Five PCs T1 connection: The five PC's were purchased with school money.

Laptops with airport connection: The five laptops were purchased with a \$20,000 grant the teacher received. The motivation for writing and submitting the grant was her own. The computers are kept on a rolling cart in the library. They are designated for three

teachers to use for specific projects, mainly science education. However, while I was there some students came in to borrow one of the laptops. Evidently, the librarian is loaning them out to students and other teachers when the science teachers do not reserve them. This created a bit of fuss since the teacher could not let those student use the computer.

Smartboard: The Smartboard was purchased with the grant money. The teacher was very comfortable with the students using it as an additional computer.

Computer maintenance: There is a district person who maintains the computers, but the teacher has had to learn how to do routine maintenance and installation of software. She downloaded Flash 5 and Internet Explorer herself. One student saw that Flash 5 was not downloaded and quickly downloaded and installed it herself. Student downloading to school computers is not permissible under district computer rules. The teacher felt comfortable with the student's actions and didn't reprimand the student.

Grouping: Some of the students had to share computers. Students selected their own groups. This was the first time this year they were permitted to select their own groups. Ordinarily their groups were selected by drawing names.

Future spending for technology: The district is currently in a financial dilemma that is not going to be solved soon. The students were not able to print out anything since all the ink cartridges in the school's computers were dry and the school is not permitted to purchase new equipment. This financial condition is not representative of it being a rural district but of having some unique community problems. The superintendent has allowed deficit spending so there is no reserve. The largest employer in town, an aluminum plant, has shut down, causing a serious loss in tax revenue. The student population is declining. The district is beginning to cut costs and is in a bit of an upheaval. This is not going to be positive for spending money on technology.

Class Content:

EL materials used

Chapter 36 text and Web-based materials

Prerequisite materials

The teacher received the materials after she had started teaching ecology. Therefore, some of the content material was a review.

Teacher adopted materials

Before they began the lesson, the teacher prepared the students by asking them to read directions first before they started clicking on their computers. Using the Smartboard, the teacher demonstrated to the students how to access the Website and navigate to Chapter 36.

At the end of the class period, the teacher conducted a 10 minute summary session with the students. The teacher asked the students concept application questions during this session.

Evaluator Description

During this participant observation, the researcher discussed Exploring Life with the students.

The following questions were asked:

- How is the navigation on the Website?
- What do you like about Exploring Life?
- What do you not like about Exploring Life?
- Overall, what do you think of Exploring Life?
- How could Exploring Life be improved to help your students learn the biology concepts?
- How did the students react to Exploring Life?

Additional sub-questions were asked during student interviews as the students brought up diverse questions and comments.

Summary of findings:

Student attitude about learning

Class 1 - The students were average to exemplary in their achievement levels. They were pleased to be included in the pilot test and were very friendly and candid with their opinions. The students were accustomed to working on computers and doing hands-on activities.

Class 2 - The students were lower level students. Three students were taking the class for the second time. They were less interested in the content, but felt pleased to be included in the pilot test. The Exploring Life materials was written at an appropriate level for

these lower level students. Only one student appeared not be able to comprehend the Exploring Life reading materials.

Teacher attitude

The teacher was comfortable using the technology with the students. She was very poised when conducting her class and allowed her students freedom to proceed through the materials at their own pace. She made sure each computer had the correct software and plug-ins loaded on each one.

Navigation

Class 1 - After 30 minutes, the students felt comfortable with navigating through the Exploring Life Website materials. There were exchanges of suggestions between groups of students. Despite the difference in settling down, most of the class finished the activities at the same time. The students who were quicker to figure out the Website navigation helped the other students navigate their way.

Class 2 - Settled down much quicker possibly because there were only 13 students in the room and the teacher was able to get around to all the students quickly.

Scrolling: The students were comfortable with scrolling up and down the Web pages to complete activities.

Novelty - They were not confused or stressed with all the moving parts expect for the circulation cells on activity 36.2.

Text

The students read the textbook before they went to the Website. They worked in pairs reading the text to each other.

Easy reading - The students reported that the textbook was written better than their standard *Biology* (Whale) text.

Interesting reading - The students felt the textbook used less terminology and more everyday language. This made the reading interesting and understandable.

Pictures and graphs - The students liked the way the pictures and graphs truly matched what they were illustrating in the textbook.

Student use of Computers

Time to acclimate to the Website - The first day the students took about 30 minutes to settle into the activity. Some of this was due to their unfamiliarity with the Website; some was due to being off-task, such as discussing the previous weekend activities.

Pop-up screens - The students didn't mind all the pop up screens on the Webquest. It took them awhile to realize they had multiple screens on their monitor.

Sound - The students would have liked more sounds. Some students' computers did not have the sound turned on.

Sound - They did not like the idea of the Website reading the material to them.

Computer activities - The students liked the way the Website allowed them to manipulate concepts. The activity group showed Concept 36.1, clicking on the changes in sunlight, precipitation, and temperature, to illustrate this point.

Evaluator Comments and Recommendations:

36.2 Navigation - The students did not understand how to continue with the activity. Many believed they completed the activity on the first page. It was not evident to students where to click on the Webpage to continue with the activity. It is recommended that a prompt be placed at the bottom of the Webpage that says "Continue" or "Next" to prompt learners to click to the next page.

36.2 Navigation - The questions are missing.

36.2 Content - The students had a difficult time with understanding what the circulation cells represented.

Video on Webquest - The video on the Webquest did not work on every computer. The students were very disappointed with this.

Teacher Resource Section - Include in the Teacher Resource Section a checklist of each plug-ins that is needed for the chapter. The teacher didn't realize she needed a plug-in installed to view the video in the Webquest.

Text and illustrations - The students would have liked the text (see chart 1) color coded or italicized so they could find their reading spot more easily. When they look at the illustration they could not return to point where they left off in their reading.

Textbook size should be small - The students do not take their textbooks home because they are too big and heavy. They would like the book to be small. Even if the book were smaller, they like the idea of being able to access the Website at home rather than take the textbook home.

36.2 Standardize how answers are done - Activity 36.2 had a different way that answers were given. Some of the students thought the X's were to mark the activity. They did not realize that was how it indicated they had the incorrect answer. This created some confusion.

36.2 Inconsistency - Sometimes the questions did not appear, sometimes they did. Is there something happening here that is different from the rest of the site?

Note: On May 18, Al Bodzin could not view any of the questions on a Macintosh computer.

36.1 Field sparrows - The picture makes them look more like swallows. It is the way the artist has them sitting.

36.1 Robins - Fruit is an important part of their diet.

36.1 Longitude and latitude - The students had forgotten which was which. Perhaps add a definition.

Webquest - The clams were described as giant clams that were up to 8 feet. Is this correct? If it is, it could be confusing because giant clams can get to be 5 inches. This is not our Website, so I don't know if you could do anything to clarify this.

Discussion

Text size and fitting on the computer screen - There were four types of computers in the room, which resulted in the students reconfiguring preferences to get a view that was satisfactory to them. Is there going to be a standard guide for setting text size preferences?

Concept 36.2 - The students had difficulty understanding the circulation cells. Few students could tell me what they were or their function. The students live in a scrub desert. Nineteen miles down the road begins a rainforest. The teacher stated these facts in the discussion, but it seemed to confuse the students more.

Concept 36.2 - Causing misconceptions: It appears that biomes don't change when one reads through the chapter and interactivities. When students are told that the Amazon rainforest could disappear in Brazil or that the Sahara desert is growing, they have a difficult time understanding how this can occur. The Exploring Life materials do not inform students that climate patterns may be affected by biological forces.

Lower level students: The teacher was reluctant to do the activities with her lower level class. I asked her to include them for our evaluation study. This continues to be a problem. Teachers want to give the material to upper level students, but not their lower level students. The first pilot chapters that were developed may have caused the reluctance to use the materials with lower level students. These subjects are ones that teachers normally skip or greatly edit and filter for their lower level students. The observed lower level students appeared to do fine with understanding the materials.

Use of the Smartboard - The Smartboard was an excellent way for the teacher to orient the students to Exploring Life. The students paid attention while watching her at the board. The teacher was also able to make sure each student was paying attention. The students enjoyed coming up to the board and "clicking" by using their hands.