

UNSOLVED PROBLEM

One of the biggest challenges I face as professor of geology and earth sciences is the delivery of an online course with a laboratory component.

The laboratory experience can be most challenging even on a face-to-face class. The professor must translate complex ideas into tangible concepts that can be mastered by the students in a finite time.

Laboratories require the use of “props”, i.e. minerals, rocks, maps (planimetric, topographic, and geologic), aerial photographs, fossils...to name a few.

All these materials must meet certain requirements to be meaningful. A rock is not a rock is not a rock! Each rock should show clearly those attributes that will allow the student to connect the abstract with the concrete. Rocks and minerals are expensive and must be purchased from reputable companies. Maps, available from the United State Geological Survey, are also costly.

Possible solutions:

1. Have a reputable supply company (Ward's) make sets of materials and sell them to the students.
2. Have a bank of materials available to students at the bookstore for purchase or lease.
3. Design a buy-back policy that would allow the student to minimize the expense of such a course.
4. Develop a hybrid course that would allow students to come to school once a week just for laboratory.

Possible problems

1. Some of the material can be destroyed/damaged in the process of using them to conduct some of the experiments required.
2. It will require a knowledgeable person to be present at buy-back time to assess if the materials being returned still meet the criteria needed for further use.
 - a. If well taken care, maps could last for a long time, especially if they are laminated
 - b. Rocks, except salt, limestone and gypsum are almost impossible to destroy (though I am sure students will find ways to do so).
3. Storage
4. Cost
5. The idea of a hybrid course would destroy the essence of an online course. Most students taking these courses cannot be physically at school on a regular basis. Furthermore, some of the students may live out of State. I have had students as far as Massachusetts taking my online courses.