

Online Message or Discussion Boards

One tool that I started with my online classes but have molded into both online and in-class sections of my courses is an online discussion board. Wolfware provides Message Boards, Vista uses Discussion Boards, and there may be other tools out there that do virtually the same thing. There are many uses for message boards that have worked well in my classes including the following three uses.

- A mechanism for students to provide multiple examples of concepts in a context that they understand. This is the function of a discussion board that I find the most useful. I provide what would typically be class discussion or homework type questions as topics. The students are then required to provide unique responses to each question. For example, in my Introduction to Resource Economics class, I ask for examples of complements. So rather than getting the peanut butter and jelly or the hot dogs and buns, we get hundreds of examples (or at least as many examples as there are students enrolled in the course). This works well in my upper level classes as well. I like asking questions of the agribusiness management students that require creativity and thought. In class, I found that students had difficulty moving beyond the tried and true into more creative responses, and I would receive homework with the same 12 – 15 employee incentives on a 10 incentive assignment. When I converted this assignment to a discussion board posting, the quality of the answers improved dramatically. Each student was only required to come up with one novel response (something not already posted by someone else) rather than the full list of 10 incentives. While I did still get some of the 12-15 classic responses, the posting also generated creative ideas that were never seen in the individual activity. I believe that reading posts already there sparked the creative juices or the response types of subsequent student postings to raise the level across the board. Providing the mechanism for encouraging creativity in students and in getting them to think outside the textbook is the most beneficial result of using message boards in my classes.

- A tool for students to interact with instructors outside of class that provides a written transcript for other students to go to also receive the benefit of answers, to expound upon the question, to modify the question to arrive at a better understanding of the issue at hand, or to provide alternative solutions that have yet to be offered. Some questions assigned as homework or lab problems can be significantly complex for students working on their own. Providing a mechanism for responding to students in a way that allows all students to benefit, if needed, is a nice result

of a message board. Many students ask questions in my online classes and email has been my method of choice for answering questions. If all students could benefit from the response, I send it out to everyone. However, email is not the ideal vehicle because multiple emails on the same topic can jam inboxes and students can lose the thread of the discussion. Having a place for threaded discussion of individual topics where students can look first for answers before asking their questions saves time and energy on the part of everyone involved. Students also like this resource near test time. Typically, the online students ask most of the questions and the in-class students refer to the discussion threads as a study guide, though there are some in-class students who also like to participate and many that are confident enough to provide answers to the questions for the other students.

- A place for students to discuss among themselves problems and issues related to a course or with the planning of assignments. This works best with the online students as they are already acclimated to the learning environment. If I have students working in groups, group space is created so that they can interact with each other without my oversight and interference. I make a point of letting them know that this is unsupervised space accessible only by the group members and that self-monitoring of language and content is expected.

I am sure that there are many other uses for message boards, but these are the three that work best for me. I was reluctant to implement this teaching tool in my classes because email has always worked best for me. At the suggestion of two students in two different classes, I decided to give it a try. After three semesters, I wouldn't go back to holding classes without this mechanism in place because it is such a valuable resource for students and a timesaver for us all.

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Enhancing Higher-Order Learning and Critical Thinking: A Strategy for Large Undergraduate Classes

The development of critical thinking in a learner is an iterative cognitive development process. For a course or a curriculum to be successful in promoting a high order of learning and critical thinking, teachers must employ appropriate teaching strategies that can be measured for effectiveness. Studies on pedagogical

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approaches on critical thinking have shown that gains in critical thinking occur with active learning methods such as reflective inquiry and analytical writing (Kaplan and Kies, 1994), peer-to-peer interaction (Smith, 1977) and class participation (Gibson, 1985). Teachers in graduate and senior-level undergraduate classes commonly include “critique of the primary research literature” as a learning strategy in course curricula. In addition to integrating a number of active learning methods, this learning strategy provides vital context to scientific and/or philosophical concepts comprising the course curriculum.

Providing context to concepts is an important part of the teaching process, particularly during the early years of higher education. However, very frequently, classes are taught at the lower order “knowledge” domain of learning (Pickford and Newcomb, 1989; Whittington, 1995). The lower-order learning with lack of context may be a reason why college students at the third-year and fourth-year levels are frequently unable to retrospectively recall important concepts vital for continuous higher-order learning. This problem also behooves introspection of teaching strategies used in large-enrollment lower-level college courses.

The critique of the primary research literature in large-enrollment lower-level college classes has not been widely discussed in the pedagogical literature. Our experience in using such a strategy has demonstrated its potential to provide students with context to scientific concepts, to build research method skills, and for students to learn at the higher orders of Bloom's taxonomy (Bloom et al., 1956). In the following paragraphs, we describe the procedures for using “primary research literature” as a learning strategy. Emphasis is placed on important logistical and learning considerations appropriate for a large class of first-year college students.

A class lecture on a scientific topic is delivered by the instructor with textbook information providing out-of-class learning context. Towards the end of the lecture, the instructor assigns a primary research paper for student review and critique. At this stage, it is important for the instructor to provide guidance to students on areas of emphasis for critique of the research paper. It is also recommended that the instructor provide a critique sheet with 5-6 structured questions that elicit opinion and critique. Following out-of-class review of the research paper, each student submits a completed draft of the critique sheet, observes an in-class instructor-led overview presentation and participates in class discussions of the research paper. These discussions should emphasize the research method and can occur among small groups of students. Random student groups can also be asked to present their critiques to one or more of the structured questions on the critique sheet. Finally, each student can improvise on the draft critiques for submission and evaluation (Figure 1).

An iterative process of discussing 3 or 4 research papers during the duration of a typical college semester

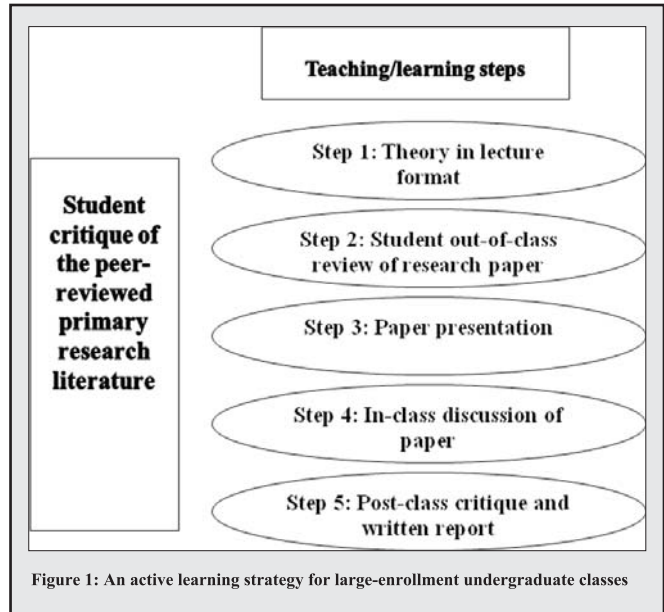


Figure 1: An active learning strategy for large-enrollment undergraduate classes

is recommended. We suggest the selection of relevant papers that would supplement and emphasize important concepts taught in the course. In our experience, this teaching strategy can be introduced into a course with little effort. Measurement of the critical thinking process can be done by administering a standard critical thinking test before and after the semester. Alternatively, at each stage of the critique process, students may place themselves on a Bloom's taxonomy instrument for a particular scientific/philosophical concept and thus provide a basis to measure learning.

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