Writing Assignments in Large Classes With Minimal Support

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Abstract

I tested the Internet-based Calibrated Peer Review (CPR) software freely available from UCLA as a tool to help facilitate increased student writing with my non-majors introductory biology class. I found the software easy to use and an effective way to increase student writing without dramatically increasing my workload. Anecdotal evidence also suggested that the writing assignments helped the students learn the material better. Most of the problems I experienced dealt with the design of the assignments themselves and overestimation of the students' computer skills. Because even small assignments using CPR require a fair amount of work on the part of the student, the software might best serve as a supplement along with other strategies used to introduce writing into large classes.

Introduction

Many Universities are strongly encouraging increased attention to writing in both lecture and laboratory courses. Writing is thought to improve students' understanding and retention of material and enhances problem solving skills and critical thinking. Writing also promotes active learning

where students are highly involved in the learning process instead of just passively listening to a lecture or reading a text. Unfortunately, preparation and evaluation of student writing also tends to be a very time- and labor-intensive endeavor. As a result, this approach is used primarily in small upper-level classes.

Over the years, a number of different strategies have been devised that allow instructors to introduce writing assignments into large lecture-based courses. These approaches, such as one-minute essays, group projects, and peer-evaluation, allow writing assignments to be used without dramatically increasing the instructor's workload. More recently, increased availability of fast Internet connections and other technological improvements have further enhanced instructors' ability to use writing assignment with even very large classes. Below, I briefly describe my experience using the Calibrated Peer Review software to use short essay assignments with a class of approximately 200 Introductory Biology students in the spring of 2003.

Description of the software.

The Calibrated Peer Review (CPR) software is an Internet-based instructional tool developed by Orville Chapmann and Michael Fiore with support from the Molecular Science Project at the University of California in Los Angeles and the Howard Hughes Medical Institute. The software is Internet-based *(http://cpr.molsci.ucla.edu/cpr/cpr_info/)* and is free for educational use.

The CPR software uses two approaches to enable instructors to use writing assignments with large classes.

- **Electronic Dissemination**.
  All aspects of the writing assignments including preparation, distribution, student submissions, peer evaluations, and grading are handled through the web interface of the CPR software. Assignments are separated into two phases, submission and evaluation. During the first phase students are given details of the assignment and must turn in their essays by a given deadline set by the instructor. The essays may be entered directly into CPR or cut and pasted from a word processing program. During the evaluation phase, the software automatically redistributes the essays anonymously among the students for evaluation. When the assignment is over, students may check their scores as well as read evaluator comments.

- **Peer-evaluation**.
  After submitting their work, students are required to evaluate three "calibration" essays using criteria established by the instructor. Each student is then asked to evaluate three of their classmates' essays and, subsequently, their own essay, using these same criteria. The student's overall score for the assignment is determined by the quality of their essay as determined by their peers, as well as by how effective an evaluator they were. In determining peer evaluation scores, the software automatically compensates for differences in evaluator competency based on how accurately each student rated the calibration essays. The instructor has the capability to override the score given to a student and the software automatically notifies the instructor of potential problems such as large differences in the score assigned to the same essay by different evaluators.

Results and Discussion.

The CPR software is easy to use and ran smoothly for the three short writing assignments I gave my class. The few instances where technical issues did arise were quickly taken care of by contacting the CPR administrators. A relatively minor but frequent problem was that of formatting

the essays. Formatting such as paragraph breaks, indentations, etc, need to be entered in the essay as HTML commands. CPR provides an HTML tutor that can be linked to assignments and most students rarely need to use more than a couple of simple commands. However, many students forgot that this step was needed and failed to preview what their submission would look like (a function provided by the software) before turning their essay into the program.

The majority of the problems I did run into using the CPR software were primarily with the design, the writing assignments themselves, or with the students and not the software. For example, I over-estimated the average technical skills of the students in my class. I discovered that, contrary to my previous assumptions, a relatively large number of students were not very familiar with web browsers and other aspects of computer use. This was not a unique situation associated with my class. Other instructors I have spoken to have come to similar conclusions for their classes. As a result, students often had difficulty preparing and submitting their essays, in particular for the first assignment. The problem was exacerbated by the tendency of the students to wait until the last moment to complete the assignments. To avoid this problem in the future, I would recommend using a practice assignment early in the course to let students familiarize themselves with the software.

A second problem that arose occurred during the peer-evaluation stage. Frequently, students would indicate that the essay they were evaluating fulfilled all of the criteria I had specified and would then give the essay a very low score because they didn't like how it was written. As the assignments were meant to concentrate on content and not on writing skills *per se*, this was a significant problem and it was necessary to override the initial scores of several students. The problem was largely taken care of by giving the students more explicit instructions on how essays were to be evaluated. This included indicating specifically how many points each of the different grading criteria was worth and by limiting the value of writing style to just two of a possible ten points for the assignment.

Conclusions

Overall, the CPR software was easy to use and seems to be an effective way to introduce writing assignments into large classes without the need for extra support (teaching assistants/graders) or significantly increasing the workload of the instructor. By using the CPR software and carefully designing the assignments and evaluation criteria, it is also possible to increase the amount of individual feedback students receive in relation to their written work. Lastly, preliminary evidence suggests that having the students write out in depth answers on material covered during lecture appeared to improve their understanding of these topics.

That said, because each assignment involves writing one and evaluating seven separate essays, it would be difficult to use the CPR software for very many essays without risking overburdening the students with additional work. More essay assignments could be potentially used if other demands on the students' time were correspondingly reduced. Even so, it would not seem practical to incorporate writing assignments as the main assessment method for the class if the CPR software were the only grading tool being used. Rather, this program seems best suited as a supplement to existing instructional methods and as an excellent way to introduce more writing into a large class when minimal support is available.

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