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Don't Overlook Homework Assignments - They're Simple, but Powerful

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These days we spend a great deal of time focused on new technologies—wireless internet or classroom response systems—or new approaches to teaching—active learning, for example. While both new technologies and new approaches to teaching have obvious benefits, we should not lose sight of simple, low-tech approaches that still offer both instructors and students many benefits especially when combined with newer approaches. Homework has been a staple of the educational world for decades. This essay outlines how homework assignments have been used effectively in two different courses in combination with a form of continuing group work I call “coalitions,” and how the use of homework in each course has influenced the evolution of its use in the other course.

Starting Out

The first course is a course in technical communications required of all Computer Science majors. While the focus of this course revolves around a series of writing and speaking assignments, students have also historically been assigned readings that complement each assignment. It’s instructive, for example, for students to see that different authors may have different opinions about resumes or presentations or even aspects of grammar.

In the course an early approach to this assignment made readings available to students and asked them to come to class ready to discuss what they had read. These homework assignments did not contribute to a student’s grade, and the results, perhaps predictably, were often disappointing.

First attempts at improving this scenario involved informally announcing some questions in class for later discussion when the readings were first distributed, but again predictably, students often forgot the questions. Eventually, I created a homework template and distributed it when readings were distributed. Students were asked to print summaries of their responses and turn in a copy at the start of class, as well as bring along a second copy.

Hashing It Out

Over the course of the term, the instructor kept count of how many submissions were made by a student and used that count as the basis for a small contribution to a student’s grade. My rubric avoids using the word “grade” and simply says I will “score” the assignment. In this two-copy model, it now became feasible for small groups of students to first discuss their various reactions to the readings, write down their group’s consensus, and then share their thoughts with the class as a whole. These groups or “coalitions” of students continue with the same membership throughout the ten-week quarter and are given time in almost every class meeting to consider their responses to the homework assignments. Having reviewed their responses, I summarize how the class has responded overall, pointing out strong answers, common mistakes and so on. This procedure meshes well with the fact that groups previously have shared and compared their individual responses.

The second course where old fashioned homework assignments have been freshly helpful is an introductory database course. Here we use a standard textbook, and students often need practice in applying concepts. Homework assignments, again not graded, were initially introduced informally as a means of providing practice opportunities. Unfortunately, with no grade attached to the homework assignments, many students would neglect doing them and suffer the consequences on exams. Indeed, those who complete the homework assignments do significantly better on the exams.

Symbiosis

Borrowing from the experience in the technical communications course, I created a homework template and homework assignments for the database course with the expectation that students would bring to class two copies of their proposed solutions to problems, one to turn in and one to have available as they discussed their proposed solutions in small groups. Again, it’s useful to have students discuss and review alternative solutions and then to share different approaches with others in the class; in this model, students also received a small contribution to their grade based on the number of homework assignments they turned in.

While there can be a variety of subjective opinions, all valid, on many communications matters, database problems tend to have one or perhaps only a small number of correct answers. Even though problems and solutions were discussed in class, since homework assignments were not graded, some students still felt uncomfortable about their efforts (or perhaps they simply weren’t in class when solutions were reviewed). To counter this problem and to offer a bit of insight for students, I created a homework model solutions template. My use of the word template is not formal, but rather refers to the way I have come to craft the homeworks and the so-called model solutions. I start with a Word document that includes a standard set of directions followed by a specific homework identifier and title and the specific homework itself (which might be to read several excerpts or solve a set of problems or something else), as well as the expected date of submission. The model solution template is another Word document that includes the text of the original homework as

well as the due date followed by my suggested problems answers or other matters. The model solutions will typically be posted online for students right after the date the homework is due. Late submissions are not accepted.

What The Teacher Learns

After quickly looking over all student submissions, common misperceptions could be noted and discussed. For example, “normalization” is a difficult technique for many students to master and homework assignments provide an excellent vehicle for expounding on often subtle points.

Since students in the database course seemed to benefit from having model solutions and expanded discussion posted, I developed a homework model solutions template back in the technical communications course as well. In this case, however, it proved more useful to provide counts of the most frequently selected items. For example, a homework assignment might ask students to read three excerpts related to presentations and to identify three points in each that caught their eye as particularly interesting, relevant, or surprising. Having a summary of responses from the class sometimes revealed clear consensus across the class and sometimes showed a wide range of answers. In any event, posting summaries helped students see that often there can be more than one correct answer and that different points of view are valid. It was easy then to also follow up in class with additional discussion prompted by the summaries.

In essence, this mechanism has provided me with a means to prod both the instructor and the students to "keep up" with the course content as the pace of a course in our ten-week quarter environment is quite swift. I like the fact that in order to produce what I call model solutions, I scan what every student turns in and once I post the solutions, all students can see what I chose to focus on or what I felt might be important or relevant.

As educators, we constantly try to improve the educational experience for our students. We know that students often learn by discussing ideas with other students and we know that students need to spend some time reading and digesting ideas presented by others. Homework assignments, even those we don’t specifically grade, can be powerful tools that can be used to motivate students to come to class prepared. As a result, we enrich time in the classroom and help our students master ideas and grow intellectually. It’s worth noting, especially for newer instructors, that your ideas regarding how you teach will grow over time and that it’s quite reasonable to incrementally add new elements to assignments or activities.