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Six Principles of a Successful Course Redesign

Posted By *Maryellen Weimer, PhD* On March 17, 2010 @ 7:49 am In Course Design,Instructional Design | <u>No Comments</u>

Required introductory courses, especially those in math and science, offer special teaching challenges. Frequently, these are courses that must be completed before students can proceed to their chosen majors.

A recent article in *Change* describes an algebra course offered at the University of Missouri-St. Louis. In 2002, the success rate in this course (a C- or above) stood at 55 percent. Three years later, 75 percent of the students were succeeding in the course without any diminution of course standards, as measured by performance on a final exam that contained the same types of problems.

Instructors attribute the change to a thorough redesign of the course. They went from three 50-minute lectures a week to one lecture plus two computer lab sessions. In the lab students used a software program to complete homework assignments. Students had to find the information needed to solve the problems on their own. The software (provided by the textbook publisher) aided them with explanations, tutorials, practice problems, and guided solutions.

This course redesign changed the roles of the instructors and teaching assistants significantly. "They used to spend their time lecturing, writing assignments and exams, and grading. Now they focus on guiding students through the course via the weekly meeting in the lecture room and then working with students individually in the learning center. The greater emphasis on individual instruction and one-on-one interactions with students is a change that most instructors find very rewarding." (pp. 46-47)

Although the example described here is specific to one discipline, the authors propose six guidelines that they believe contribute to success in any introductory course that students find difficult.

Principle 1: Provide a structure for the course that guides students in their active learning. Regardless of the course, students are responsible for doing the learning. "The instructors are there to provide structure and guidance to help them learn. The lecture session provides an anchor and structure for the course that helps the students focus on the task they need to complete that week." (p.47)

Principle 2: Provide sufficient time on task and enforce deadlines. When students aren't interested or lack motivation, they need a schedule that keeps them on task. In the example that was provided by using the technology to open and close access to assignments, the tutorials and problems could still be accessed by students after they were closed, but students lost points if assignments were not completed on time.

Principle 3: Reward students for their efforts. The new course design lets students retry a homework problem as many times as they like. Instructors have found that when given that option, many students will work as long as it takes to get the right answer, and the right answer counts no matter how many tries it took to solve the problem correctly. Homework scores equaled 1/8 of the final grade in the course. Students quickly discovered that in this course they could improve their grades by working harder.

Principle 4: Provide regular assessment of progress. The online homework and quizzes offered students immediate feedback. The software also keeps an online grade book that students can access at any time.

Principle 5: Accommodate diverse styles. Some students do work better on their own. In this course students could work on problems in the lab or in their room. Most students taking the course did benefit from resources provided in the learning center, especially the presence of the instructor and teaching assistants during the regularly scheduled sessions. Still, it is important to be flexible and provide opportunities for students who prefer to work independently.

Principle 6: Stay in touch. Often, students who aren't particularly interested in a course prefer to remain unknown. Unfortunately, that ends up hurting most of them. With this course design, the technology allowed instructors to keep track of students. If an assignment was missed, a quick message noting its absence and including an offer of help was sent out. "The personal attention of the instructor often provides all the motivation a student needs to complete the assignments." (p. 48)

Reference: Thiel, T., Peterman, S., and Brown, M. (2008). Assessing the crisis in college mathematics: Designing courses for student success. *Change* (July-August), 44-49.

Excerpted from A Course Redesign that Contributed to Student Success, January 2009, _The Teaching Professor_.

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