

Ensure Students Are Learning: Faculty Descriptions of Innovative Teaching Practices

Three-Part Process to Reinforce Learning Objectives

Innovative Teaching Practice Description:

While in-class quizzes are used to motivate students to complete their homework, they also serve as a tool to reinforce learning. The in-class quizzes are the second part of a three-part process. The first part is the homework—students are assigned homework problems that must be completed by the next class meeting. Homework is graded based on completion and effort. As such, students must demonstrate that they attempted to complete each problem by showing their mathematical work, writing a narrative about the steps they took to solve the problem, or illustrating their solutions using a pictorial explanation. When students arrive in class, there is a whiteboard where they can list any problems that they found especially challenging. Shortly after the beginning of class, students take a quiz that includes five questions, three of which come directly from the homework. Students may use their completed homework to help them complete the quiz and may confer with classmates to work through quiz problems together. Although not strongly encouraged, students may ask the professor for guidance as well. The quizzes are graded based on correct answers and students must show their work for each problem. While the students are taking the quiz, the instructor selects a few problems from the list of challenging questions students posted and writes them on the board. As students are completing the quizzes, the instructor asks students who answered one of the challenging questions correctly to write their answers on the board. Students who volunteer to work a problem on the board do so while others are finishing the quiz and they are not required to explain their work to the class. The third part is the review process. After all students complete the quiz, the instructor reviews the questions posted on the board. During this time, students may ask questions or share their own approach to solving the problem. Because students learn and process information differently, the instructor supports the idea that there are multiple ways to solve a problem and ensures that students understand by giving various examples. The instructor also guides students through problems in class.