

# Ensure Students Are Learning: Faculty Descriptions of Innovative Teaching Practices

## Using a Flipped Classroom Design in Biology

### Innovative Teaching Practice Description:

In the flipped classroom model, students are expected to learn the basic content material for each week before they come to class. The instructor provides students with a guide that asks them to define important terminology related to the content in their readings (which students access on the online course management system and are expected to complete before class). Students complete the guides individually but are allowed to work in study groups. They then bring their completed guide to class. Students also have online quizzes based on the readings. Students are required to retake the quizzes until they answer each question correctly.

The work in class is mainly application of the material. The instructor does not define or go over any of the terms in class but instead gives students a problem that requires them to use their readings and completed guides. The instructor introduces the problems to the class as a large group and then asks students to break into small groups of their choice. The entire class comes together afterward to review the activity. An example of an in-class problem or activity is a case study in the form of a forensic anthropology problem. Students are presented with a model of a skeleton and are asked a series of questions, such as whether the skeleton is a child or an adult (meaning students have to review their readings and notes about growth plates) and whether

the skeleton is a male or female. Or, if the bones of the skeleton have a spongy appearance, they are asked what disease caused that to happen.

### Notes From the Instructor About This Innovative Teaching Practice:

The instructor has participated in faculty-led development practices both at her college and outside her college to help her to develop the flipped classroom. She utilizes OpenStax.org for open, free resources. The instructor also recommends the book *Make it Stick* by Mark McDaniel and Peter Brown.

During the first few weeks of class, most students are not used to the flipped class model and would instead prefer that the instructor lecture. As a result, it may take students a while to want to engage in the flipped classroom model.