

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

## Peer Instruction Increases Engagement in Science Course

### Innovative Teaching Practice Description:

A chemistry instructor uses peer instruction to reinvent traditional “chalk talk” science lectures. This innovative practice increases student engagement as they interact to apply learned concepts and solve instructor-provided problems.

To promote small group interaction, classroom seating is organized into small pods of three or four students. In this classroom, seating arrangements are fluid as students move around seeking help from peers and self-selecting their small working groups. Prior to class, the instructor prepares a handout with 15 to 20 problems relevant to the lecture topic. Problems are grouped to match the flow of the lecture.

Class begins with 20 to 30 minutes of instruction before breaking into the first practice session. During these sessions, students work together to reinforce concepts learned during the lecture by solving the first set of problems. The instructor circulates among the groups, spending 3 to 4 minutes with each, offering immediate feedback while encouraging struggling students to seek help from high-performing peers. The practice session ends once learners finish the first set of problems. The instructor reviews any misconceptions or common errors before moving on to the next topic of the lecture. The instructor alternates between lecture and practice until class ends. Since students spend time during class actively applying their learning, they are assigned a minimal amount of homework usually due by the next class period.

This innovative practice increased student engagement because a greater number of students asked questions, corrected mistakes, and asked for help. Students also built community by turning to each other for support.