

Ensure Students Are Learning: Faculty Descriptions of Innovative Teaching Practices

Group Dynamic Plays Significant Role in Science Poster Project

Innovative Teaching Practice Description:

Students work together in groups on a lab experiment to develop a scientific poster that follows a five-step scientific process. The poster must include a problem statement or research question, hypothesis, methods, results, and discussion. Students also take photos to document their processes and include these on the poster. For this project, the instructor randomly assigns students to groups of three or four and provides a list of departmentally-approved lab experiments. The instructor verifies each group's selection to ensure that there are no duplicate experiments in the same class.

As a group warmup, the instructor uses icebreakers to help the students get to know each other. For example, the instructor may survey the groups to find out who has the most siblings or who travels the greatest distance to get to campus. These questions help students get comfortable with each other, while also revealing things that may be relevant to the group dynamic. For instance, if one student lives very far from campus, the group may need to consider scheduling online meetings outside of class instead of face-to-face meetings.

The instructor allocates some class time to allow the groups to strategize about their approach to the project and decide what each member will contribute. Students conduct and document their experiments during class, but they must create their posters and prepare their presentations outside of class. The poster presentations, which take place during a lab session, resemble a science fair in that students stand by their posters while the instructor reviews the information and asks questions. The instructor invites other instructors and students to stop by during this time. The project is worth 50 points of the lab portion of the class.