A Flipped and Active Introduction to Scientific Communication

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Activity Summary:
- In Lecture, students are introduced to the concepts of primary and secondary literature in the sciences, as well as the process of peer-review.
- Students then complete homework that requires them to define terms and brainstorm the advantages and disadvantages of getting information from these sources.
- In recitation, teams of students compete to list the advantages and disadvantages on white boards, and are then called upon to defend their answers.

Principles of Biology I Information Literacy Goals:
- Identify campus science librarian, his/her role, and know how to contact
- Distinguish between different types of scholarly sources, including primary literature, review articles, and other types of secondary sources
- Articulate the difference between peer-reviewed work and other sources
- Understand different types of scientific communication and why each is important
- Identify the parts and purpose of each section of a primary article
- Introduced to the role of citing other’s work and the ethical implications of knowledge sharing and plagiarism

Active Learning Definition:

“Active learning is an educational approach in which teachers ask students to apply classroom content during instructional activities and to reflect on the actions they have taken.”

“Lectures invite student passivity, and research shows that passive students learn less.”

“Active learning approaches, on the other hand, are student centered, requiring students to manipulate academic content during the lesson and placing the teacher in an advisory role. The bottom line in active learning is, in order to learn, students must do more than simply listen.”