

Julie B. Schram – Teaching Philosophy

As an instructor, my primary role is that of a facilitator, providing students opportunities to learn by investigating new content or experimenting with methods for approaching new material. One underlying theme that informs how I structure my courses is to assist students in developing their own appreciation for the amazing aspects of biology that dictate the everyday lives all living things.

One of my primary objectives is to provide students with purposefully designed opportunities to help students develop their ability to think critically about course content and create a personal framework into which new content can be incorporated. To accomplish this, one assignment I have included to complement in class discussions are primary research article reviews. In these article reviews, students must read, interpret, and write about their impressions of published primary literature. To do this students must integrate It is important that students feel confident in their knowledge and ability to find answers to their problems or questions.

Encouraging and guiding students by helping them develop the skills necessary to find the information they need is an essential element of the learning process. To accomplish this, students must be comfortable enough to ask questions and make mistakes. In my courses, I begin on the first day to foster a positive learning environment, one in which students feel comfortable making mistakes and discussing those mistakes and their consequences with myself or their peers. To begin this process, one of the first activities students do is individually fill provide me with some basic information about themselves and their expectations for the course. Having this type of extra background information helps me understand who is in my course, some of their academic backgrounds and prior knowledge as well as basic interests. I make sure that I incorporate as many of the students' interests during my lectures throughout the course and in this way involve students in course organization.

To further develop this comfortable learning environment, I encourage students to actively take control over how they investigate and complete a given project by working on assignments together and in an order that works the best for them. I found this to be a useful technique for students in lecture and laboratory classes as well as inquiry-based field experiences and mentorship situations. This type of collaborative activity allows students to learn from their fellow students who often have very different backgrounds, experience, and learning styles from which to draw. I believe this type of environment is important to enhance learning potential for all students.

In addition to collaborative projects, I incorporate assignments that support individual student development of skills that are important not only for learning biology but also written and verbal communication. The content of many of my courses have focused on basic biological principles and mechanisms that are observed in many different contexts. I develop course structures that emphasizes basic mechanistic information to foster the students' development of a knowledge framework or lattice into which new information can be more easily incorporated through lectures and collaborative group assignments. For instance, after briefly discussing topics in lectures I periodically provide students with a list of primary literature papers that go deeper into subjects discussed in class. Student groups choose the topic or topics they were most interested in and collaboratively develop their own scientific conference style

presentations over several weeks to share with the class. By the end of the course, students independently find and present the results of primary literature of their choosing. In this way, students progressively take more control over what and how topics they are interested in are presented and discussed in class.

To highlight the types of questions and information that are important, I regularly informally quiz students on some aspects of the previous class and connect their answers to the day's lecture. In the survey lab courses cover a wide breadth of information, I give students periodic practical examinations and lab notebook assignments to assess learning and provide constructive feedback to find out and let students know more about their learning progress in the course. For each examination, I include multiple question styles designed to allow students' to demonstrate critical thinking, understanding of course content, and their ability to transfer and apply the information they have learned. I design multiple choice and short answer exam questions that incorporate images, specimens, diagrams, etc. to give students with different learning processes the opportunity to best demonstrate their abilities. For my lecture course, I used take home exams in addition to in class examinations with a variety of question styles to give the students opportunities to demonstrate their knowledge in a variety ways.

A guiding theme for my courses is to emphasize the importance of students feeling comfortable making mistakes and persisting in their search for answers. Possibly my most basic driving goal is to encourage students to stop looking for THE right answer and learn to look at a situation, gather information, and make conclusions about what they observe, based on demonstrated evidence. There is not always one right path to take to get to a destination or answer. I firmly believe that each person's observations are valid and I want students to be more confident once leaving my class in the validity of their own observations and knowledge.