Promoting Dialogue in the Lab Classrooms

Dialogue plays a key role in developing scientific reasoning skills and the ability to discuss scientific concepts. In lab settings, encouraging dialogue helps students refine their ideas and begin thinking like scientists. However, while labs are inherently an active learning classroom, the fast pace and heavy workload often leave little room for meaningful conversation. Creating intentional opportunities for dialogue ensures that students engage not only with the procedures but with the underlying concepts. This resource guide offers strategies for explicitly incorporating dialogue into your lab classroom.

- **Include dialogue in pre-lab activities:** You can have students complete activities that they will discuss with lab instructors at the start of lab to connect concepts to experimental work. This can include topics such as experimental procedure development, safety discussions, or background theories. You can also set aside class time before the lab to discuss these ideas if your course is connected to a lecture.

- **Build dialogue opportunities into the procedure:** Ensure dialogue occurs by making it part of the experimental procedure. Include steps to promote decision making or discussion with peers about what step to take next, data analysis, or interpretation methods to connect concepts to the data collected. You can also have part of the procedure include a discussion check-in with another group or an instructor. If you have a large lab, consider scheduling a short discussion break halfway through the lab.

- **Extend dialogue into post lab reports:** You can include opportunities for dialogue after lab by having students complete oral exams or present about their data, findings, or another aspect of the lab. You can also include asynchronous discussion boards to ask questions or discuss findings about their report.

Resources

Seery, M. K., Agustian, H. Y., Christiansen, F. V., Gammelgaard, B., & Malm, R. H. (2024). Incorporating dialogue in laboratory teaching. *Analytical and Bioanalytical Chemistry*.

DeTemple, J., Hayes, H. E., & West, J. E. (2025). *The Dialogic Classroom in Higher Education: Revolutionary Listening for Curiosity, Engagement, and Deep Learning*. Routledge.

Seery, M. K., Agustian, H. Y., Christiansen, F. V., Gammelgaard, B., & Malm, R. H. (2024). 10 Guiding principles for learning in the laboratory. *Chemistry Education Research and Practice*, *25*(2), 383–402.

For more information or to discuss how you might incorporate these ideas into your courses, contact the Reinert Center by email at cttl@slu.edu.