



Chicago
Center for
Teaching

THE UNIVERSITY OF CHICAGO

INDIVIDUAL TEACHING CONSULTATION FINAL REPORT

Date: 3/16/18

Instructor: James Callahan

Course: Comprehensive General Chemistry II – Discussion

Consultant: Alex Haskins

Attendance: 16

Summary

This is a general chemistry course for which James serves as a discussion leader. It is an introductory level core course and is the second course of three in a year-long sequence. The professor lectures on Mondays, Wednesdays and Fridays, and James runs a discussion section on Tuesdays. The course also includes a lab component on Thursdays. The class I observed took place at the beginning of the 10th week of the winter quarter.

Based on my observations, James is a capable discussion leader who effectively encourages student engagement in class through a variety of low-stakes questions and effective alignment of learning goals through the use of discussion section handouts and work on the chalkboard. James provides helpful and detailed information that clarifies material covered in the lectures and prepares students well for conducting their lab experiments. My main recommendations for James are as follows: (1) promoting a more engaged learning environment by either giving students more time to think through problems or offering exam and lab evaluations for student meta-cognition concerning effective learning and 2) promoting comprehension of course material by preparing material for students beforehand that indicates what will be covered in section and incorporating more review of old material into the discussion section.

Part I: Pre-observation Meeting

Date: February 19, 2018

In our pre-meeting, James told me the overall goals for the class were centered on making sure the students comprehended the lecture material and understood how the lecture and discussion material related to the lab. He also wanted to preview how to do the upcoming lab, help students understand homework mistakes, and review with students for the upcoming midterm exam. James expressed that student participation, enthusiasm, and comprehension of the material is generally good and that he had had success before using the think-pair-share model and even cold-calling from time to time in class. Still, James expressed that he would like me to pay

attention to unengaged students in discussion section as well as the clarity of his teaching. Thus, we focused on student engagement and comprehension.

Part II: Observation and Recommendations

Observation Date: March 6, 2018

Before class, James wrote homework problems and announcements on the board and gave out handouts for the class. James started the discussion section by going through the announcements, fielding student questions about the midterm, and outlining what he hoped to cover in the discussion section, which focused on molecular orbital theory. Roughly half of the students spoke during the discussion section.

Comments/Suggestions: James was particularly effective in his use of the chalkboard to explain concepts and figures, and the coordination between his work on the chalkboard and the handouts enabled the students to ask particular questions about unclear material with little lag time. It also seemed particularly helpful for the students to see the molecular orbitals visibly displayed and the handouts allowed the students to engage in a more active manner by writing down the orbitals and asking questions when the material was unclear. James and I discussed that one way he could further encourage engaged student learning is by giving students more time to think through the problems he presents in the discussion section. James has tried the think-pair-share format in the past with some success, although he expressed some concern about time constraints. One way of cutting down on time spent in class setting up the format is to prep students beforehand with some sort of indication of what will be covered and what groups students will be divided into, either through a sheet, an online forum, or some other means. I also recommended that in future courses in which James has more control over the syllabus and assignments, incorporating exam and lab evaluations into the exams and labs student do could help facilitate engaged learning on a more meta-cognitive level. In short, having such assessments offers students opportunities to reflect on which assignments and exercises actively contribute to their learning and which ones seem to inhibit it.

After he explained the outline for the class, James spent the majority of the discussion section covering molecular orbitals. As before, James presented the orbitals through drawn diagrams on the chalkboard and coupled this with the aforementioned handout and low-stakes questions based on lecture material. Most students took extensive notes on his worksheet and their responses to his low stakes questions demonstrated increased comprehension as time went on in class.

Comments/Suggestions: Based on student notes on his worksheets and the responses to James' low stakes questions, it seemed as though the combination of the two allowed students to follow along with relative ease and thus, led to a relatively higher level of student comprehension. Furthermore, James' frequent sign posting (telling students what they've covered and what they will cover) and his frequent explanations of why he was doing something the way he was seemed to also aid student comprehension. James also mentioned in our pre-observation meeting that he often administers optional miniature papers for the students to check comprehension of recently-covered material. Moving forward, it might help James to include more review of previously covered material.

James could do this while covering new material in the discussion section. He could also include specifically tailored review questions in his optional miniature papers or conduct a brief assessment (e.g. minute papers, muddiest point exercises) to get a sense of student retention and comprehension of recently covered material.

Part III: Post-observation Meeting

Date: March 15th, 2018

In our final meeting, James was very receptive to suggestions and thought carefully through strategies for increasing the active engagement of students as well as student comprehension. James is effective at providing space for students to ask questions, providing a road map for material that will be covered in section, and visually demonstrating course and lab material in section. Furthermore, James' awareness of class discussion dynamics and his desire think creatively through ways to encourage active student engagement and comprehension are inspiring. Toward the end of our post-observation meeting, James and I discussed how to effectively shift from a coverage model of teaching to a student learning goals-oriented model. I suggested some resources to aid him in developing other classroom assessment techniques for engaging students moving forward and highlighted effective practices for discussion leading, especially when lectures (which are beyond the discussion leader's control) are not aligned with labs or exams. James is skilled in the classroom and is committed to developing his strengths as a teacher moving forward.