

Oral Examinations

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Overview of the workshop

- Introduction and goals of the workshop
- Oral exams in chemistry: details
- Oral exams in chemistry: goals
- Oral exams in chemistry: assessment
- What to expect from students
- Strategy and tips
- How to use oral exams in your course
- Practice oral exams

Introduction and goals

- Darin has used oral examinations in physical chemistry for eight semesters.
- Drew has used oral examinations in inorganic chemistry for three semesters.
- We want to share our experiences.
- We want this workshop to be for you!

Oral exams in chemistry: details

- In physical chemistry the oral exam is part of a two component exam along with a written take-home.
- For the first exam the oral part is worth only 15% of the exam total.
- For the second and third exams the oral is worth 25% and 30% respectively.
- All oral components are worth 30% for physical chemistry II.

Oral exams in chemistry: details

- In all cases the exams are intended to last about 30 minutes.
- Most of the exams are given during the Lab period, but overflow into non-scheduled class time can occur in physical chemistry I.
- The largest class so far is 26 students. The oral exams were conducted over 2-3 days.

Oral exams in chemistry: details

- I generally do not supply a list of potential questions before the exams, but I do supply a list of the types of questions to expect.
- TAs run practice oral exams to individuals or groups before the first exam.
- I have a set list of two or three questions that I ask everyone, but I let their answers guide course of the exam.

Oral exams in chemistry: details

- Each general category is graded with a percentage.
- Grades are generally high.
- I go over the grades with the students at the end of the exam.
- They have a chance to contest their grade.

Oral exams in chemistry: details

- Inorganic chemistry's oral exams started in response to positive feedback from physical chemistry.
- All the students in inorganic have had physical chemistry.
- Inorganic chemistry is a capstone of sorts.
- Very small class size 4-6 students.

Oral exams in chemistry: details

- Four written and three oral exams.
- Oral exams are 15% of the total exam score.
- Exams are designed to run about a half hour.
- Students get the same first question in advance and then draw two of over 30 questions from a hat at random.

Oral exams in chemistry: details

- Grading is 5 points per question.
- Each question is graded immediately, but discreetly with annotated comments.
- At conclusion of exam each grade is discussed with opportunity to contest.
- Grading is generally lenient.

Oral exams in chemistry: goals

- Unambiguous testing environment.
- Testing tool for concepts.
- Expose lack of understanding to students.
- Teaching tool.
- Give practice for presenting complicated ideas.
- Good practice for grad/med school oral exams, interviews and presentations.

Oral exams in chemistry: assessment

- Difficult to assess effectiveness quantitatively.
 - Small data pool and no control group.
 - Student course evaluations.

Oral exams in chemistry: assessment

- “Even though I stress out about the oral tests, I think they are a fair way of evaluating my knowledge.”
- “The oral exams are the most useful because he shows you what you do know and do not know”
- “I like the oral exams because I feel like I have a better understanding of the material after I’m done”
- “Oral exams help students prepare for the exams and is good practice at communicating complex ideas to others”

What to expect from students

- They will be nervous!
- Students show nervousness in a variety of ways
 - HA-ADD
 - Deadman walking
 - Crying
 - Regurgitation? (not so far)

What to expect from students

- Students answer questions in a variety of ways as well.
 - Less is more
 - Core dump
 - What's the question?
 - Is this an audience or an oil painting?

Strategy and tips

- Allow enough time.
- Listen!
- Poker face, not Stonehenge
- Provide minimal help.
- Work to the student's strengths.
- Be gentle and supportive.

Strategy and tips

- Have your questions prepared ahead of time.
- Keep note taking to a minimum during the exam.
- Grade high
- Do not do an oral version of a written exam.

Strategy and tips

- Look to ask primarily conceptual questions
- Try to come up with questions that can lead you through the exam.
- Focus on important or main points.
- Do not underestimate how long the exam might take.
- Do not be afraid of very quick exams.
- Avoid gross inconsistency, but welcome minor inconsistency.

*How to use oral exams in your
course*

