

Using Oral Exams to Help Prepare Future Elementary Mathematics Teachers

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Mathematical Concepts at Central College

- ❑ Taught every fall semester.
 - ❑ Roughly 20 students per class.
 - ❑ All Elementary Education majors.
 - ❑ Many are mathematically weak.
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Why Give Oral Exams?

- ❑ A teacher's ability to communicate mathematics effectively is very important.
 - ❑ Thorough individualized feedback can be provided to the students. i.e. I make this a formative experience.
 - ❑ It will be easier for them to teach mathematics!
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Preparations for the Exams

- Oral exams held the day after the paper-and-pencil exam.
 - Students get the list of five topics well ahead of time.
 - Students can bring one index card of notes for each topic.
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Logistics of Doing the Exams

- The student rolls the die to have topic randomly selected.
- They teach their topic within a seven minute time limit.
- Students are to speak as if they are the teacher and I am the student. Show professionalism!
- I take copious notes.

Examples of Topics

- “Describe the Babylonian or Mayan numeration system and its properties using appropriate terminology.”
 - “Explain why $7 \div 0$ and $0 \div 0$ are both undefined (but for somewhat different reasons) using the missing factor method to division.”
 - A longer list of topics can be found at <http://tinyurl.com/23yan9>
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Grading & Feedback to the Students

- Oral exams are worth 15/100 overall exam points.
 - 9 points possible for math content
 - 3 points for mathematical vocabulary
 - 3 points for professionalism
 - Thorough, typed feedback...
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Feedback From Students

- “Yes (oral exams were beneficial), it made me realize how much I didn’t use vocabulary correctly but need to.”
 - “...although every time I was intimidated, I became more confident.”
 - Survey data generally supports this activity.
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What Did I Learn?

- ❑ Hold high expectations and many students will rise to the occasion.
 - ❑ Understand they'll be nervous!
 - ❑ Improvement matters, but be honest with them.
 - ❑ The students actually see value in this experience!
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