

MATH-GA.2840-004:  
Written and Oral Presentation  
Lecture 2: Tips for Teaching

Aleks Donev & Tia Sondjaja

# Exercise: Elevator Talks

Prepare a 3-minute elevator talk for one of the scenarios below.

Topic:

1. Your current research project
2. What is [your favorite mathematical field/topic] ?  
(For example: What is “Linear Algebra” ?)

Audience:

- (a) An expert in your field
- (b) A researcher whose expertise is not in your field
- (c) A first-year graduate student in your dept.
- (d) An undergraduate student in a Calculus 1 class
- (e) Your neighbor

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1. Practical Tips
2. Pedagogical Considerations
3. Managing a Course, etc.

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8. Incorporate elements of active learning

# Using blackboards effectively



# Using slides effectively

# Blackboard vs. Slides?



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## 2. Pedagogical Considerations

1. What are the goals and learning objectives of the course?
  - ▶ Bloom's Taxonomy
2. How do we get there?
  - ▶ Lectures
  - ▶ Active learning methods
3. How do we evaluate students' learning?

# Bloom's Taxonomy

A framework for classifying “educational learning objectives into levels of complexity and specificity”.

1. Remembering
2. Comprehending
3. Applying
4. Analyzing
5. Synthesizing
6. Evaluating
7. Creating

# Bloom's Taxonomy

Other examples in university-level math:

<https://www.math.toronto.edu/writing/BloomsTaxonomy.pdf>

# Active Learning Methods

Benjamin Braun, Priscilla Bremser, Art M. Duval, Elise Lockwood, and Diana White, *What Does Active Learning Mean For Mathematicians?*, Notices of the AMS, Vol 64, No 2

<http://www.ams.org/publications/journals/notices/201702/rnoti-p124.pdf>



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2. Think-pair-share
3. Clickers
4. Flipped classrooms
5. Inquiry-based-learning methods

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Video: *Eric Mazur Shows Interactive Learning*

[https://www.youtube.com/watch?v=wont2v\\_LZ1E](https://www.youtube.com/watch?v=wont2v_LZ1E)

# Lectures vs. Active Learning

# More Resources: Workshops at NYU

## **Friday, February 9 — Active Learning Workshop**

Featuring Anton Borst, Robert DiYanni, and Trace Jordan, Center for the Advancement of Teaching

Global Center for Academic and Spiritual Life, 238 Thompson Street, Room 461, 9:30-11:30 a.m.

(Breakfast will be offered beginning at 9:00 a.m.)

## **Friday, March 9 — Collaborative Learning Workshop**

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# More Resources: MAA Instructional Practices Guide

<https://www.maa.org/programs-and-communities/curriculum%20resources/instructional-practices-guide>