

# Overcoming challenges in teaching organic chemistry to non-majors

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- Original Laptop U (1993)
- Four departments
  - Agriculture and Natural Resources
  - Business
  - Liberal Arts and Education
  - Math, Science and Technology
- Organic chemistry (2004)

# Student enrollment and majors

## Enrollment

Year	CHEM 2301	Math, Science &Tech <sup>1</sup>	Agric & Nat Res <sup>2</sup>
2008-2009	14 (7) <sup>3</sup>	9	5
2009-2010	19 (9)	11	8
2010-2011	13 (6)	8	5
2011-2012	19 (11)	11	8
2012-2013	37 (13)	19	18

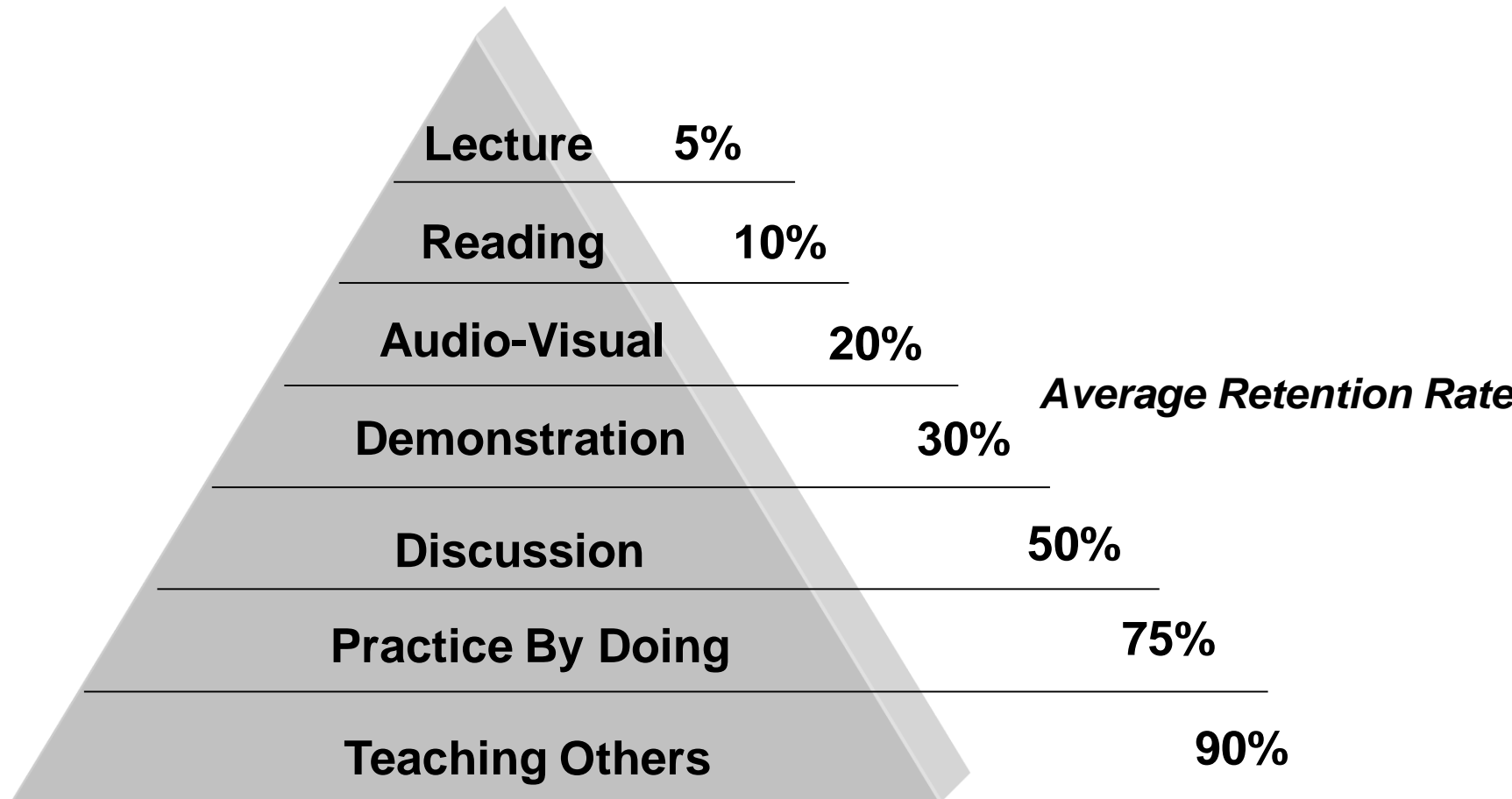
## Majors

- 1. Biology, Health Sciences and Environmental Sciences
- 2. Animal and Equine Sciences
- 3. Numbers in parentheses denote # of seniors

# Transition from traditional lecture to the current format

- Why?
  - Emphasis on technology infused learning
  - The Learning Pyramid
  - Provides an alternate format
  - Addresses the accent issues
  - Enables learning with a friend

# “Learning Pyramid”



*Based on Bruner  
“The Process of Learning”*

# Advantages

- For the student
  - Audiovisual vs. reading the assigned material
  - Scheduled, required viewing (time management)
  - Ability to learn at one's own pace and schedule
  - Pause and rewind

# Advantages

- Student
  - Ability to pose any question regarding the topic without feeling embarrassed
  - Review
  - Doubling down on class time (time on task)

# Advantages

- Instructor
  - Students engaged in learning (increases time on task)
  - Maximizes efficacy of classroom
  - Every student is on the same page
  - Clarify common misunderstandings



# Advantages

- Class time
  - Clicker quiz, 1 or 2 questions
  - Answer questions
  - Involve students in solving problems

# Drawbacks

- Students
  - Reduced ability to seek instant clarification
  - Students with jobs
  - Other pressing coursework
- Instructors
  - No visual clues
  - Prep Time

# Student Views

- Fall 2011
  - <http://mediamill.cla.umn.edu/mediamill/display/177328>
  - <http://mediamill.cla.umn.edu/mediamill/display/177330>
- Fall 2012
  - <http://mediamill.cla.umn.edu/mediamill/display/177035>