

# You're Teaching – But are They Learning?



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# Before you Assess, set Goals

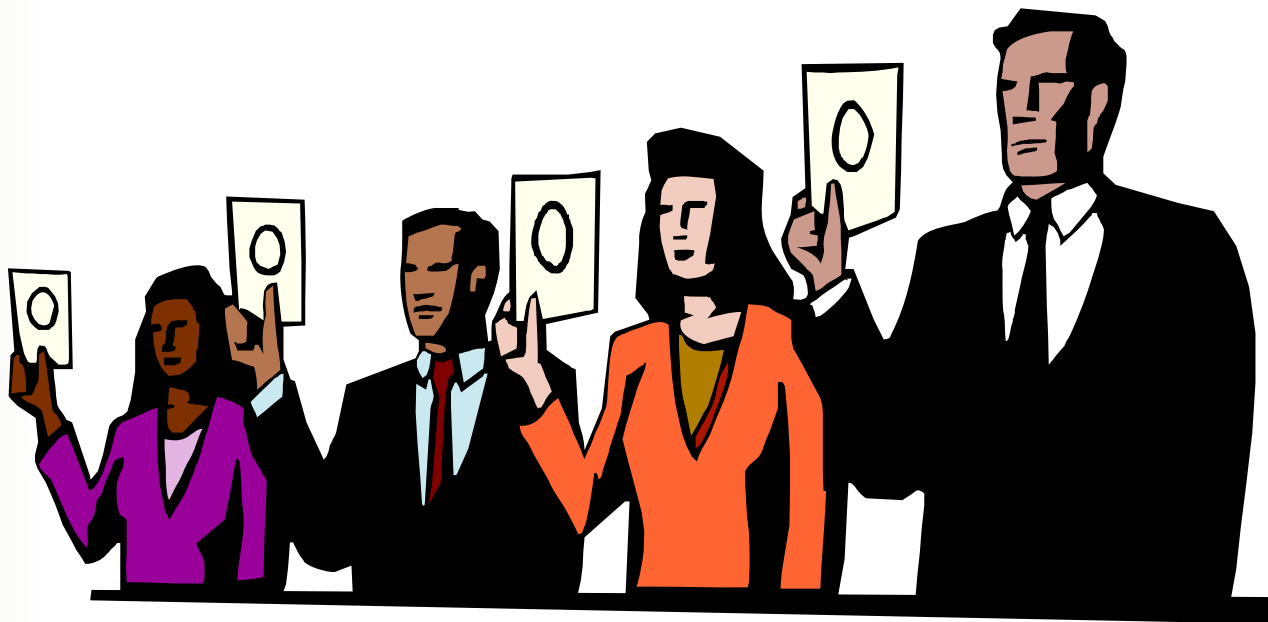
- **Make sure that**
  - **You are clear at the start about what the students should be able to do at the end**
  - **The teaching follows the test**
  - **The tests reflect the teaching in content AND style**



## **Your Turn**

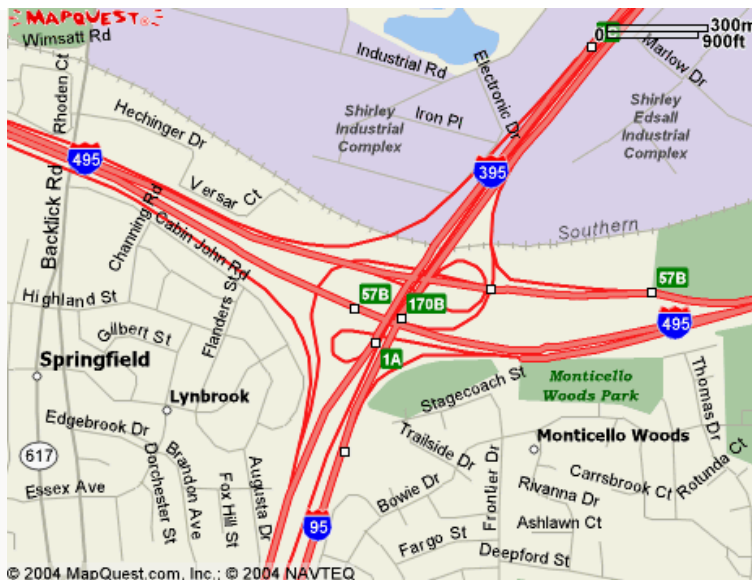
- **The next unit is “Energy”**
- **Write 3 goals for your students in your current course**
- **Use “action” verbs**
- **Compare your goals to another person’s goals**

**We'll discuss four different  
types of assessment.**



# Diagnostic Assessment

To get your students  
from where they are  
to where you want them



you first have to  
know where  
they are.



# Diagnostic Assessments

- **What do your students already know?**
  - **Don't waste class time with boring material**
  - **Don't start over their heads either**
- **Is this class the same as other classes?**
- **What are the trends over time?**
- **Did your students improve during the course?**



# Diagnostic Assessments

- **Guidelines for use**

*Peer Instruction* **Chapters 7 & 8**

*Peer Instruction for Astronomy*

**Chapter 6**

# Assessments Focused on Learning







# Assessments that focus on Learning

- **Teaching but are they learning?**
  - Find out what students are thinking
  - Help students identify problems
  - Adjust classroom time to maximize learning
- **In class questions**
  - Does everyone understand? Is that clear?
  - Ineffective



# Classroom Assessment Techniques

- **Why Active Learning?**
  - **Break up Lecture—after 15 minutes concentration & effective note taking decline (Johnson et. al., 1990)**
  - **Encourage student participation—most students never ask a question**
- **Use techniques that involve everyone**
  - **Peer instruction—others addressing**
  - **Variety—mix several methods**



# 1-3 Minute Paper

- **Many variations**
  - **What was the most important thing learned in class today?**
  - **What question(s) remain?**
  - **What was the “muddiest” point covered today?**
  - **Summarize today’s lecture in 1-4 sentences.**
  - **Talk to your neighbor and write a question you both have about today’s class.**



# Focused Question

- **Similar to Minute papers, but not as free-form**
- **Ask a question on a difficult concept/idea**
  - **Identify incorrect ideas**
  - **Address next class**
  - **Evaluate/modify teaching next semester**
  - **Repeat**



# Concept Paper

- **Used when incorrect ideas interfere with learning**
  - **Pose a question to be addressed in class**
  - **Allow students to write “honest” answer**
  - **Later, pose 1-2 follow-up questions**
  - **Let students revised original answer based on what they have learned**
  - **Focus: students identify problems**



# Think—Pair—Share

- **At any point, pose a question/a problem**
- **Ask students to think/attempt an answer**
- **Let students pair up, trios okay**
- **Compare efforts**
- **Everyone talks, active learning**
- **You can now call on anyone—asking for his/her “group” answer**
- **Can require a written response as well**



# Reading papers takes time

- **Work out a system**
  - Section # or BIG first letter last name
  - Necessary to only read 10-20%
  - Comment during the next class—students can learn from mistakes
  - Written feedback is nice
- **Points? ✓ + ✓ ✓ -**
- **Anonymous?**

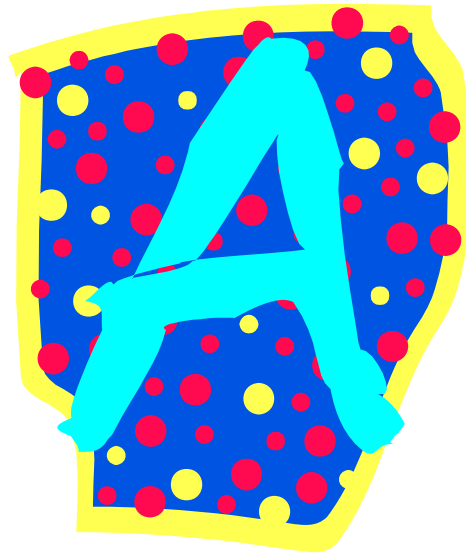


# Outside of class assessments

- **Computer-based**
  - Questions posed on web site
  - Textbook packaged materials



# Assessments Focused on Grading





# Assessments focused on grading

- **Homework**
  - **Problem solving**
  - **Conceptual (Mazur)**
- **Labs—authentic**
- **Exams**
  - **Bloom's Taxonomy (1956)**
  - **Content reflects classroom emphasis**



# Constructing exams

- **Content reflects class time/homework/etc.**
- **Conceptual/problem solving mix**
- **Types of questions**
  - **Multiple choice**
  - **Problems/short answer**
- **Grading**
  - **Develop scheme before finalizing questions**



# **Writing effective multiple choice questions**

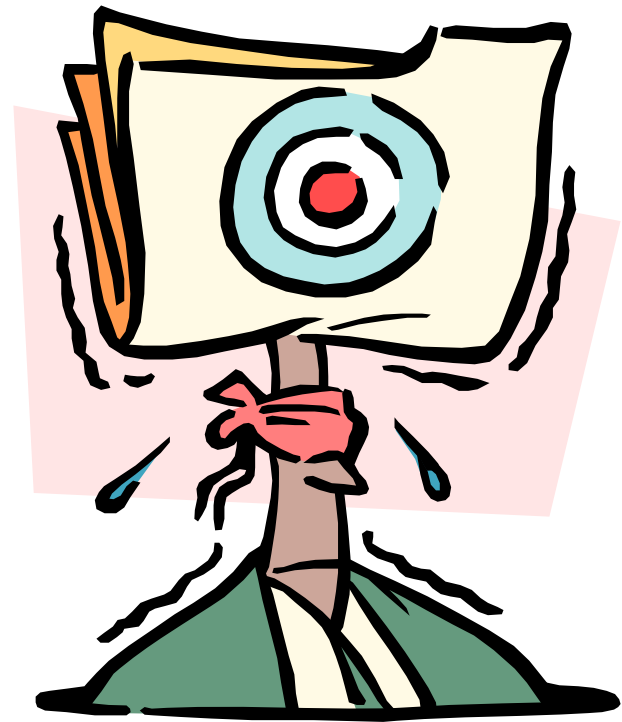
- **Identify problems using the checklist**
- **Make revisions**
- **Now, compare your revised questions with a new partner.**



# Assessments focused on grading

- **“Alternative” Assessments**
  - **Student-selected weighting**
  - **Reflective journals**
  - **Portfolios**
  - **Group Assessments**

# Assessing the Professor





# Assessing the Professor

- **End of the semester**
  - Campus form
  - Encourage written comments
- **Mid-semester**
  - Personalized
  - Implement changes immediately



# Quickie Evaluations

- **After 2-3 weeks, “how’s it going?” paper**
- **Problem identification**
  - **Poor exam/homework grades**
  - **Focus on obtaining positive feedback by letting them know you are concerned and willing to listen**





# Colleague Observation

- **May be required as part of tenure evaluation**
- **Take initiative—ask someone in dept. or ed. support unit to watch you teach**
  - **Preliminary meeting—what to look for**
  - **Observation—ask for a written summary including positives as well as areas for work**
  - **Post-observation meeting—discuss ways to improve**



# Assessing the Professor

## A Case Study from Univ. Texas

- **Simple adjustments can improve student course evaluation scores**
- **See abstract from Mary Kay Hemenway's journal paper in *Innovative Higher Education***



# **Additional Assessment Resources**

- **National Societies**
- **Books**

# Future Questions?

## Email us at ...



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