

Tests, Quizzes and Assessment of Student Learning

Information from the first portion of this presentation can be obtained online at:
<http://www.hcc.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/quizzes.htm>

Tests serve four different functions. They are:

- 1.
- 2.
- 3.
- 4.

Challenge yourself...what do you know?

A test can be defined as?

- a. something that is limited in scope, focused on specific course material
- b. a comprehensive assessment of student knowledge
- c. typically administered in 15 minutes or less
- d. none of the above

A examination can be defined as?

- a. a comprehensive form of assessment of student knowledge that may be given at the end of a semester or several times during the semester
- b. an assessment limited in scope
- c. something that can be administered in 15 minutes or less
- d. all of the above

Reducing Student Anxiety

- *Ask a couple of easy questions first
- *Make first quiz/test/exam easier
- *Give more than one exam in a course
- *Avoid use of pop quizzes
- *Instruct students on key concepts to study
- *Encourage group study
- *Schedule review sessions
- *Ask students how you can ease their anxiety

Key points to remember in test development

- *Spend enough time developing the test, quiz, and exam
- *Make sure that your test content matches what you are teaching or have taught. It is important for tests to have good content validity
- *Use many different testing methods (multiple choice, essay, take home, group testing)
- *Write questions to address things other than recall.

Types of Test Questions to Ask

To Measure	Ask These Kind of Questions
Knowledge (Facts, Terms, Principles, Procedures)	Ask students to: Define, Describe, Identify, Label, List, Match, Name, Reproduce, Outline, Select, State
Comprehension (Understanding and Interpreting Material)	Ask students to: Convert, Defend, Estimate, Distinguish, Explain, Generalize, Provide Examples, Predict, Summarize
Application (Solving Problems, Applying Concepts or Principles Learned to New Situations)	Ask students to: Demonstrate, Modify, Operate, Prepare, Produce, Relate, Show, Solve, Use
Analysis (Recognize unstated assumptions or fallacies to distinguish between facts and inferences)	Ask students to: Diagram, Differentiate, Distinguish, Illustrate, Infer, Select, Relate, Point out, Separate
Synthesis (Integration of Learning from Different Areas as well as Solving Problems through Creative Thinking)	Ask students to: Categorize, Combine, Devise, Design, Explain, Generate, Organize, Plan, Reconstruct, Revise, Tell
Evaluation (Judging and Assessing)	Ask students to: Compare, Contrast, Appraise, Criticize, Describe, Justify, Interpret, Support

Different Kinds of Tests/Question Format

Type of Test/Question Format	Information About the Test
Multiple Choice	These items can be designed to measure simple and complex concepts. Can be scored quickly and with a good level of reliability
True False	These tests are less reliable than other forms. They may be testing the students guessing ability rather than their knowledge related to a subject. Some faculty include an EXPLAIN section to a T/F exam, thus the student chooses an answer an then must explain their choice
Matching Tests	This type of test can effectively

	examine a student's ability to recognize relationships between concepts.
Essay Tests	Essays offer the instructor the ability to ascertain the student's ability to organize, integrate, and interpret material. Research has shown that students study more for essay exams. Reliability in grading can be challenged when using essay exams
Short Answer Tests	Students answer questions in one or two sentences or a paragraph. These type of tests may be easier to write, but take longer to score than MC or T/F and again reliability can be questioned in the scoring of the answers. These may give you a limited insight into how students express themselves in a written format related to a specific concept
Performance tests	These can be administered individually or in small groups. They offer the student the opportunity to demonstrate their skills in a specific area. Students should be informed ahead of time the scoring criteria, exactly what they are supposed to do and should be given chance to perform task more than once or perform several tasks
Create a Game	Students are asked to work in groups to create a game related to the course material. Can be a word game, board game or trivia game. They need to include the rules and whatever is needed to play the game.
Take home tests	Offer students opportunity to work at their own pace and utilize all materials available to them. These offer the instructor the opportunity to ask longer questions and save class time. Make sure to provide students with EXPLICIT instructions regarding their individual performance on the exam.
Open book tests	These tests have the potential to simulate situations that professionals encounter on a daily basis. We all use resources to answer questions. Be

	prepared...students who do not know the material may waste time searching for an answer rather than answering the questions. These tests reduce stress in students
Paired testing	Similar to group testing...see below.

Tips for Constructing Effective Tests, Exams and Quizzes

1. Write new exams each time you teach a course: Although it is time consuming, you may make changes in a course and the exam you created in the past may not reflect the changes within the course. Content validity of exams is highly important. You can make old exams available to students for study.

2. Create test items as you go: Don't wait until a short period of time before you will administer the test to create items. It may be helpful if you take a few minutes at the end of each lecture and create several test items. The material is fresh in your mind and you may save time in the long run using this technique. Davis suggests writing exam questions on index cards. This could easily also be done on the computer.

3. Have students submit test questions: Pair students and have them submit test questions over a specific section of material within the course. Limit the number of questions they submit and indicate that the course instructor may edit the questions for content clarity. You could use student items for testing or for review purposes.

4. Obtain tests from faculty at other institutions: May give you ideas of how they construct test questions. Be cautious of using tests from faculty at your institution, as these tests may have already circulated

5. Consider cumulative test/exams: These exams require students to review and potentially integrate information students have already learned and studied which can be reinforcing. Cumulative test/exams offer students opportunity to synthesize and integrate course content

6. Make sure your instruction and test questions are clear: Have a colleague or graduate teaching assistant review your questions for understanding and clarity. This is very helpful to individuals new to creating tests.

7. Give students information about timing: Inform students how long they have to complete the test/quiz/exam, how much they should spend on specific sections as well as possibly providing a hint related to an essay question.

8. Place some easy items on the test first: Students who are anxious within the testing environment will appreciate these items as they will place them at

ease and facilitate their confidence in continuing with more difficult items that will appear on the exam.

9. Timing of questions: Use rule of thumb for length of time students will need to complete the questions. One half minute per question for true/false, one minute per item for multiple choice, two minutes for short answer, ten to fifteen minutes for essay and make sure to allow time for students to review their work once it is completed. Allow ten to fifteen minutes for review. Another suggestion offered is to allow students approximately four times the time it would take you or a graduate assistant to complete the test.

10. Be mindful of the test and visual layout: Make sure to allow enough space in margin and between questions to make the test easy to read. Group similar testing items, make sure to allow enough space for short answer and essay items.

Testing Students In Groups

Things to Consider When Testing in Groups

***Assign Groups**

-Random assignment, students not known to one another, 2-4 students per group, balance of students who are quiet vs. verbal, students with comparable grade/skill level, inform students ahead of time that the test will be completed in a group format.

***Test Questions**

-Questions that focus on application of knowledge, that invite discussions.

***Be sure to allow an option for differences of opinion**

-Encourage students to discuss the question for up to five minutes. If at the end of this time they cannot reach consensus, then can write separate answers, and therefore get separate grades.

***Allow students extra time to complete the test**

-If you were to allow one hour for a solo test, allow at least one and a half hours for a group test

***Mechanics of testing**

-Provide all students with a copy of the test and they turn in one copy as well as all the scratch copies. If different answers occur on specific questions, students are to note this on one of the group member's tests and all tests will be graded individually.

Benefits Of Group Testing

***Questions allow course instructor to see student thought processes**

-Students are required to think on their feet and provide rationale to group members of their answers that can be more like thinking and responding to situations in real life.

***Course instructor potentially has fewer tests to grade**

-Time is a factor that the course instructor may not have much of; this could provide the instructor with more time.

***Students encourage (peer pressure) one another to contribute to test discussion**

-This is especially beneficial for students who need to work on increasing their assertive communication skills in sharing their thoughts and opinions. Students also appear to answer questions with more depth of thought and demonstrate increased confidence in their verbal skills.

Problems Associated with Group Testing

***Course instructor cannot completely guarantee all students will equally participate but the potential exists for all to receive the same grade**

-Instructor thoughtfully grouping the students to a certain degree can address this.

***Testing takes longer than administering a test to individual students and can get noisy**

-Examine length of time available, don't rush. Make sure to have space necessary to allow student discussion.

***Students must trust the thought processes of their peers.**

Seeking Student Feedback on This Format of Testing

Have the students answer the following questions about the test and format on a half sheet of paper posttest

-What degree was the test what you expected based on the study guide you were provided?

-How much did you contribute to the test (1=low, 10=high)?

-How much did your partner (or other group members) contribute?

-Did you feel overall the contribution of all group members to be equal?

-How did this format for testing impact your learning?

-Do you feel that this format assisted you in understanding and retaining the material assigned for this test?

-What was the level of knowledge conflict that you encountered during this experience?

Student Feedback on Group Testing

***This format assists students in retaining material more than other testing formats**

***Students report increased understanding of topics**

-By having to discuss or explain a topic with their peers, this facilitates their understanding of the topic

***Can decrease test anxiety in some students as they feel that they have their peers to rely on.**

***Improved student performance on tests and felt it was more like real life example "team meeting"**

***Students felt that they answered the questions more thoughtfully**

-Due to the discussion and multiple perspectives communicated by their peers, students felt that the questions were answered with greater depth and thought.

This form of testing is similar to our interactions in the real world. When we encounter questions and problems in life, we rely on our own thinking, but often check out our choices and decisions with others. In a clinical setting therapists may speak with a manager about their concerns or coworkers. This form of testing allows students to discuss all their ideas, reaffirm what they know, and what they have learned.

Information for this presentation came from the following references:

Davis, B.G. (1993). *Tools for teaching*. San Francisco, CA: Jossey-Bass, Inc.

McKeachie, W.J. (1999). *Teaching tips: Strategies, research, and theory for college and university teachers (10th ed.)*. Boston: Houghten Mifflin Company.

Meyers, C., & Jones, T.J. (1993). *Promoting active learning: Strategies for the college classroom*. San Francisco, CA: Jossey-Bass, Inc.

Sammes, K.M. (1999, April). *The group testing model of assessing student learning*. Paper presented at the meeting of the American Occupational Therapy Association, Indianapolis, IN.

Here are some additional resources you may find helpful related to assessment of student learning and testing:

General Testing Tips from University of Kansas:

<http://eagle.cc.ukans.edu/~cte/resources/teachingtips/general.html>

Alternatives for Testing and Reviewing from University of Kansas

<http://eagle.cc.ukans.edu/~cte/resources/teachingtips/alternatives.html>

Principles of the Motivating Professor from Western Michigan University

<http://www.wmich.edu/teachlearn/new/newintellexciting.html>

Grading Multiple Choice Questions that Require Critical Thinking from University of Michigan

<http://www.crlt.umich.edu/evalmain.html>

On Evaluation of Students from University of Michigan

<http://www.crlt.umich.edu/evalmain.html>

Improving Multiple Choice Tests from Kansas State University

http://www.idea.ksu.edu/papers/pdf/Idea_Paper_16.pdf

Improving Essay Tests from Kansas State University

http://www.idea.ksu.edu/papers/pdf/Idea_Paper_17.pdf

Matching Instructional Objectives to Testing Materials from Kansas State University

http://www.idea.ksu.edu/papers/pdf/Idea_Paper_18.pdf

Listing and Links to All Teaching Centers in the US

<http://eagle.cc.ukans.edu/~cte/resources/websites/unitedstates.html>