CTL

Types of Tests – excerpt from
Quizzes, Tests and Exams[1]
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Many teachers dislike preparing and grading exams, and most students dread taking them. Yet tests are powerful educational tools that serve at least four functions. First, tests help you evaluate students and assess whether they are learning what you are expecting them to learn. Second, well-designed tests serve to motivate and help students structure their academic efforts. Crooks (1988), McKeachie (1986), and Wergin (1988) report that students study in ways that reflect how they think they will be tested. If they expect an exam focused on facts, they will memorize details; if they expect a test that will require problem solving or integrating knowledge, they will work toward understanding and applying information. Third, tests can help you understand how successfully you are presenting the material. Finally, tests can reinforce learning by providing students with indicators of what topics or skills they have not yet mastered and should concentrate on. Despite these benefits, testing is also emotionally charged and anxiety producing. The following suggestions can enhance your ability to design tests that are effective in motivating, measuring, and reinforcing learning….

Multiple-choice tests. Multiple-choice items can be used to measure both simple knowledge and complex concepts. Since multiple-choice questions can be answered quickly, you can assess students' mastery of many topics on an hour exam. In addition, the items can be easily and reliably scored. Good multiple-choice questions are difficult to write-see "Multiple-Choice and Matching Tests" for guidance on how to develop and administer this type of test.

True-false tests. Because random guessing will produce the correct answer half the time, true-false tests are less reliable than other types of exams. However, these items are appropriate for occasional use. Some faculty who use true-false questions add an "explain" column in which students write one or two sentences justifying their response.

Matching tests. The matching format is an effective way to test students' recognition of the relationships between words and definitions, events and dates, categories and examples, and so on. See "Multiple-Choice and Matching Tests" for suggestions about developing this type of test.

Essay tests. Essay tests enable you to judge students' abilities to organize, integrate, interpret material, and express themselves in their own words. Research indicates that students study more efficiently for essay-type examinations than for selection (multiple-choice) tests: students preparing for essay tests focus on broad issues, general concepts, and interrelationships rather than on specific details, and this studying results in somewhat better student performance regardless of the type of exam they are given (McKeachie, 1986). Essay tests also give you an opportunity to comment on students' progress, the quality of their thinking, the depth of their understanding, and the difficulties they may be having. However, because essay tests pose only a few questions, their content validity may be low. In addition,

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the reliability of essay tests is compromised by subjectivity or inconsistencies in grading. For specific advice, see "Short-Answer and Essay Tests." (Sources: Ericksen, 1969, McKeachie, 1986)

A variation of an essay test asks students to correct mock answers. One faculty member prepares a test that requires students to correct, expand, or refute mock essays. Two weeks before the exam date, he distributes ten to twelve essay questions, which he discusses with students in class. For the actual exam, he selects four of the questions and prepares well-written but intellectually flawed answers for the students to edit, correct, expand, and refute. The mock essays contain common misunderstandings, correct but incomplete responses, or absurd notions; in some cases the answer has only one or two flaws. He reports that students seem to enjoy this type of test more than traditional examinations.

Short-answer tests. Depending on your objectives, short-answer questions can call for one or two sentences or a long paragraph. Short-answer tests are easier to write, though they take longer to score, than multiple-choice tests.

They also give you some opportunity to see how well students can express their thoughts, though they are not as useful as longer essay responses for this purpose. See "Short-Answer and Essay Tests" for detailed guidelines.

Problem sets. In courses in mathematics and the sciences, your tests can include problem sets. As a rule of thumb, allow students ten minutes to solve a problem you can do in two minutes. See "Homework: Problem Sets" for advice on creating and grading problem sets.

Oral exams. Though common at the graduate level, oral exams are rarely used for undergraduates except in foreign language classes. In other classes they are usually time-consuming, too anxiety provoking for students, and difficult to score unless the instructor tape-records the answers. However, a math professor has experimented with individual thirty-minute oral tests in a small seminar class. Students receive the questions in advance and are allowed to drop one of their choosing. During the oral exam, the professor probes students' level of understanding of the theory and principles behind the theorems. He reports that about eight students per day can be tested.

Performance tests. Performance tests ask students to demonstrate proficiency in conducting an experiment, executing a series of steps in a reasonable amount of time, following instructions, creating drawings, manipulating materials or equipment, or reacting to real or simulated situations. Performance tests can be administered individually or in groups. They are seldom used in colleges and universities because they are logistically difficult to set up, hard to score, and the content of most courses does not necessarily lend itself to this type of testing. However, performance tests can be useful in classes that require students to demonstrate their skills (for example, health fields, the sciences, education). If you use performance tests, Anderson (1987, p. 43) recommends that you do the following (I have slightly modified her list):

- Specify the criteria to be used for rating or scoring (for example, the level of accuracy in performing the steps in sequence or completing the task within a specified time limit).
- State the problem so that students know exactly what they are supposed to do (if possible, conditions of a performance test should mirror a real-life situation).
- Give students a chance to perform the task more than once or to perform several task samples.

"Create-a-game" exams. For one midterm, ask students to create either a board game, word game, or trivia game that covers the range of information relevant to your course. Students must include the rules, game board, game pieces, and whatever else is needed to play. For example, students in a history

of psychology class created "Freud's Inner Circle," in which students move tokens such as small cigars and toilet seats around a board each time they answer a question correctly, and "Psychogories," a card game in which players select and discard cards until they have a full hand of theoretically compatible psychological theories, beliefs, or assumptions. (Source: Berrenberg and Prosser, 1991)

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