

# Essays on Teaching Excellence

## *Toward the Best in the Academy*

*Volume 17, Number 7, 2005-06*

A publication of The Professional & Organizational Development Network in Higher Education ([www.podnetwork.org](http://www.podnetwork.org)).

## Practice Tests: a Practical Teaching Method

**Margaret K. Snooks, *University of Houston-Clear Lake***

The use of practice tests has been around for decades. This essay describes the development, implementation, and evaluation of short daily tests on assigned readings. Giving daily practice tests over the past several years has resulted in higher end-of-semester grade averages in my classes, increased reliability of students' exam scores, and more positive student satisfaction with teaching. I have found student responses to practice tests to be overwhelmingly positive; and, most importantly, learning improves.

**College Students and Reading Assignments** Daily practice tests are a method aimed at (1) encouraging students to complete reading assignments on a regular basis, (2) clearing up student misconceptions about what an instructor believes is important in textbooks, (3) at least partially allaying students' anxiety about reading assignment material on which they will be tested, and (4) improving student learning. Daily practice tests are related to Classroom Assessment Techniques (Angelo & Cross, 1993) but focus on reading assignments rather than on content or skills covered in class.

Practice tests include the "pair and share" and "peer tutoring" components of some CATs. In a study of faculty and student

experiences with classroom assessment, Steadman (1998) found that most faculty members believe such practices improve student learning and give them feedback on student comprehension. For the students, assessment "...involves students in active mental processing of new information and makes them more aware of themselves as learners" (Steadman, 1998, p. 23). Practice tests, as assessment instruments, accomplish the same goals. Practice tests are also a form of diagnostic assessment or a test being used to identify students' strengths and weaknesses on particular topics (Gall, Borg & Gall, 1996). An additional benefit of using practice tests is their inclusion in faculty members' annual reports or portfolios as evidence of special concern with student learning.

**Developing Practice Tests** The first step is for instructors to be clear about learning objectives and how the information in textbooks contributes to essential knowledge and skills. There must be complete coordination among course objectives, the course content to be covered both inside and outside of class, and questions on examinations.

The second step is for instructors to read textbooks carefully to identify important content and skills that will not be covered in class due to lack of time. It is also a good idea if students receive a set of take-home short answer essay questions based on what instructors believe to be important in the reading assignments. Students can then read chapters each week, answer the short essay questions based on the reading, and research any information they encountered but did not understand. The last question I use for every set of chapter questions is: "What was not clear?"

Not all in-class practice test questions will appear on exams, but practice tests provide students with a clear understanding of the type of exam questions that may be included and the

form they will take. Some textbook publishers provide test questions with instructor manuals or on CDs, but instructors should first list what issues in each chapter are significant and only thereafter consider sample questions. I usually end up devising about 90% of my practice test questions in spite of publisher-provided questions.

**Implementation of Practice Tests** On the first class day I tell my students that there are at least 3 sources for learning in the course: the instructor, the textbook author(s), and the students themselves. Students also hear and read on the syllabus that class participation is welcome and encouraged. Students earn points for participation in class discussions. My students know that I will not insult them by reading the textbook aloud in class or by giving lectures based entirely on the textbook. The material in textbooks is a supplement to what is covered in class. Students will demonstrate mastery of knowledge and skills by participation in class discussions and by answers on examinations. Exam questions will include material from the textbooks. The material covered in class (and not covered in the textbook) will also appear on tests.

At the beginning of every class meeting, I ask students if they have any questions about the reading assignment for the day. This is likely to be the only time the students and I discuss what is in the textbook. The practice tests, containing about five multiple-choice questions, are then handed to the students. These tests are the means by which attendance is taken, and students get credit for being present whether or not they do well on the test. The point of the tests is the practice of taking tests on assigned readings and participation in discussions of questions taken from reading material. Having the tests at the beginning of class has the added benefit of discouraging late arrivals. No class time is lost to roll taking since students confirm their presence through their practice tests.

Students first take the practice test individually and then compare and discuss their answers with a peer. Finally, there is a class discussion about the best answers and, more importantly, why they are best. We also discuss why other answers are not as effective. This helps me discover possible misunderstandings stemming from the wording of test questions. As is true of questions on the regular tests, the questions on practice tests are authentic, academically sound, and essential to learning course content. The practice test innovation is not about “teaching the test” or drilling or learning by rote. It is about critically analyzing questions, recalling important aspects of assigned readings, and developing expertise with regard to course content and its application.

**Evaluation of the Impact of Practice Tests** My original goal of using practice tests was to improve student learning and student grades. Based on a 10 year comparison of data from 80 classes with approximately 2400 students, final averages have increased by 5 points (Snooks, 2005).

In addition, three years of analyses indicate a direct positive relationship between the number of practice tests taken and my students’ final course grades. Reliability on all exams is .85 or above. Practice tests increase students’ critical thinking about the purpose of questions while increasing student proficiency for taking tests. When using objective tests instructors can easily see the numbers of students who missed each question and the “wrong” answers they selected. With this information, instructors can learn precisely what concepts or skills should be re-taught and the likely causes of student confusion.

Student satisfaction is another measure of teaching effectiveness. Gretes and Green (2000) found that 90% of students believed practice tests helped them study for “real” exams. Thome (2000) used practice tests to encourage

preparation for class. Another group found practice tests to be a good review strategy (Kulik, Kulik, & Bangert, 1984). On both mid-term and end-of-semester evaluations, my students have indicated that they like taking daily practice tests and find them beneficial. In response to the question “What does your instructor do in this class that helps you learn?” the option “class discussion/lectures” is ranked as most helpful while “practice tests” is listed second. Students usually answer “excellent” to questions about “Instructor’s interest in whether students learn.” My most recent student evaluations averaged 4.9 out of 5.0.

An unintended consequence of practice tests is that students exhibit less hostility during discussions following the return of major exams. A student may say a test question was “tricky”, but other students will typically say things like “There was a similar question on a practice test.” One of my students recently wrote on an anonymous evaluation: “Your test questions are straightforward for any student who has read the chapters, comes to class, and has participated.”

**Summary** Daily practice tests improve student learning and course grades by encouraging students to do reading assignments in advance of class meetings. Such tests also encourage students to come to class on time while increasing student test-taking skills and defusing post-exam hostility. Devising practice tests helps instructors clarify their course goals, better coordinate relationships between reading assignments and class discussion/lectures, and hone their test-writing skills.

## **References**

Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). San Francisco, CA: Jossey-Bass.

Gall, M. D., Borg, W. R. & Gall, J. P. (1996). *Educational research: An introduction* (6th ed.). NY: Longman.

Gretes, J. A., & Green, M. (2000). Improving undergraduate learning with computer-assisted assessment. *Journal of Research on Computing in Education*, 33(1), 46-55.

Kulik, J. A., Kulik, C. C., & Bangert, R. L. (1984). Effects of practice on aptitude and achievement test scores. *American Educational Research Journal*, 21, 435-447.

Snooks, M. K. (2005). Unpublished raw data based on comparisons of test scores over the past ten years among 8 courses taught each academic year with approximately 2400 students total.

Steadman, M. (1998). Using classroom assessment to change both teaching and learning. *New directions for teaching and learning*, 75. San Francisco, CA: Jossey-Bass.

Thome, B. M. (2000). Extra credit exercise: A painless pop quiz. *Teaching of Psychology*, 27, 204-206.

*Margaret K. Snooks (Ph. D., University of Texas at Austin) is a fulltime faculty member at the University of Houston-Clear Lake, where she also serves as co-convener of the Teaching-Learning Enhancement Center.*