Best Practices for Classroom Assessments

This document has been created to assist you in learning about best practices for using tests and other types of assessments to measure student learning better and minimize sources of error on student scores/grades, sometimes caused by cheating. Please review the following tips and call on us if you have further questions.

Objective Testing: Objective tests are usually used when measuring the lower levels of Bloom's cognitive taxonomy (recall, comprehension and application).

Best Practices

1. **Write your own objective questions OR rewrite ones from a test bank. Do not use the questions exactly as written from the test bank.**
    *   Why? Students can copy/paste the questions into a search engine to find the questions and answers online.
    *   Why? Many test bank questions are either poorly written or not written in your voice, so students may be confused unnecessarily.
    *   Do: Write several questions that measure the same content and assign them to a category for randomized presentation on individual tests.
    *   Do: Change proper names of people or organizations in story problems so that searching online cannot turn up the exact item OR have current students make up problems that can be included in future semester exams.
    *   Do: Rewrite at least 10% of your questions each semester. For assistance, see the [short version on writing good objective test items](#) or the [longer version with more examples](#).
    *   Do: Consider including higher-order questions (application, synthesis, evaluation, such as through scenario-based questions) if you provide practice quizzes with these types of questions or activities in which higher-order thinking is developed.
    *   Do: Use the Scantron statistics to help you improve the items, if you plan to use them again. (Ask IT for more information, if desired.)
2. **Plan your test so that questions are aligned with course or unit learning outcomes and reflect the relative importance you have allocated to each outcome in class.**
    *   Why? If you have spent a lot of time on one outcome, your test should reflect that, by including more questions (or more points) to measure achievement of that outcome.
    *   Do: Make sure all questions measure learning of the course or unit outcomes you have selected and emphasized in class or through other assignments/homework.
3. **If you are giving paper tests in a face-to-face classroom:**
    *   **randomize the order of the questions**
        *   Why? By creating two or three identical versions of the test (same items, different order), the "wandering eyes" syndrome is minimized.

- **number each test and have the students sign in next to the test number they take**
  - Why? If any test numbers are missing at the end of the hour, you can identify which student took a test out of the classroom from the sign-in sheet. This also serves as a deterrent to taking the test in the first place.
  - Do: If you pass out the graded exams to go over them, repeat this process to get the tests returned prior to leaving the classroom.
- **Do not pass out exam questions and answers on the same document or mark the documents with a date or semester**.
  - Why? This makes it much more difficult to match questions with answers should the test leave the room somehow or if students take pictures of test pages with their cell phones.

Additional Tips If You Offer Tests Online

4. **If you give all tests online, require that the midterm and final be taken in a proctored environment, such as our Testing Center, with a picture ID and password required.**
   - Why? Students who may be having someone else take tests/quizzes for them, looking up answers online during tests, or finding other ways to cheat will not likely perform at the same level on a proctored test.
   - Do: Assume that any online quiz or test is open book/open note, even if you state otherwise, as it is relatively easy to look things up, search the Internet for answers, etc. when taking tests online.
   - Do: Setting time limits on the test may prevent students from looking up *every* or even *most* questions.
   - Do: Consider making any online quiz/test open book/open note, but make the questions predominantly higher-order questions in which they cannot look up the answers, but instead, can look up in the textbook/notes, etc. information they might use to solve the problem or invent the solution, much as they might do on the job or in the real world.
5. **Utilize the features in Moodle to:**
   - **Limit the number of questions on each screen to 7 or less.**
     - Why? Students are unable to print the entire test all at once.
     - Why? It prevents Moodle from timing out while students are completing a test and having to reset the exam (starting over, allowing time to look up answers, etc.). It forces students to save progress more often.
   - **"Shuffle the questions" so that they appear in a different order for each student.**
     - In this case, all of the items are the same for all students, but they appear in a different order for each student.
   - **Randomize the questions so that each student is being measured on the same content, but the specific questions are randomly chosen from a category of questions. Each exam contains a unique set of questions.**
     - When creating your categories of questions, you can indicate you want them to be randomized, when used in an actual test.

- Do: You should have many (10?) questions that measure the same content (category), so that the randomization is unlikely to pull up the same question for each student to answer.
- **"Shuffle within a question" so that the answer choices are in a different order for each student.**
  - When randomizing questions, as described above, not all students get the same items, only the same number of items measuring the same categories of content.
  - "Shuffling within a question" will alter the order of the answer choices each time an identical item appears in a student's test.
- **Require a password be used to access the quiz/test.**
- **Select the "secure window" option.**
  - Why? This feature prevents copy/pasting of a test item and printing.
  - Although this is an important deterrent, remember that students can still open other browsers on other computers, iPads or cell phones to Google answers, unless they are in a proctored environment.
  - This feature does not prevent students from moving over the window, opening a new browser and searching for answers. However, setting time limits on the test may prevent students from looking up more than a few questions.
- **As long as the test-taking period is still open, only allow students to see their scores, not the answers to the questions when the test is finished.**
  - Why? This prevents students who take the test early from printing, copying, or sharing the answers with students who have not taken the test yet.
  - Do: If you want the students to see the answers to the questions for learning purposes AND you do not plan to reuse the items, set Moodle to display the answers *after* the test-taking period for all students has closed.
  - Do: If you plan to reuse the items, it is best not to display the answers, but instead:
    a. Identify the questions missed by many of the students and provide additional information on those topics OR
    b. Display the answers, but significantly change/rewrite the questions and their answer choices for next time, or remove the question from its category in your test bank.
- **See our "Optimal Security Settings for Moodle Quiz Activity" document for specific instructions on how to do these things when setting up quizzes/tests in Moodle.**

Alternative Assessment Options:
Alternative assessments are usually used to measure multiple outcomes through one assignment or measure higher order skills expressed in some types of learning outcomes, such as the ability to apply content knowledge to real-world tasks through problem-solving, creative thinking, or critical thinking. Alternative assessments might be project designs, lab reports, oral presentations, skill demonstrations, mock interviews, position papers/essays, ill-defined problems from real-world settings, etc. See the resources at the end of this document for more examples.

1. **Consider including at least one alternative assessment measure per class, per semester.**
   - Why? Not all students demonstrate their learning best through test performance. By providing several types of assessments throughout the term, students who do better through writing, performance, or collaborative problem-solving have a chance to put their best foot forward.
   - Why? Alternative assessments are better aligned with 1) learning outcomes that target higher-order cognitive skills, 2) affective outcomes or 3) performance-based skills.
   - Why? Alternative assessments can measure both the processes using in performing tasks (seeking info, organizing and interpreting info, collaborating in a small group) and applying quality standards to the product produced (set by professional organizations in pertinent careers? provided in a rubric?).
   - Some faculty avoid using these types of assessments because of the time they envision needing to grade them. However, the time it takes to write, set up and assemble a good test is similar to the time it takes to create a well-written scoring rubric. However, the latter requires much less time to revise and reuse than creating a new test, also. Rubrics serve as
     1) efficient and effective ways to explain assignment expectations to students,
     2) efficient scoring tools for faculty, and
     3) efficient tools for faculty to use when providing feedback to students on their task performance
     Note: See samples in Resource list below; contact IT for assistance in designing rubrics for your alternative assessments, as desired).
2. **If your class is an introductory class that includes large numbers of vocabulary terms, facts and principles that are foundational to your discipline, consider using frequent quizzes to measure this lower-order content throughout the term.**
   - Why? If memorization of these items is important and students will not have regular opportunities to use this information throughout the term (hence, learning them as part of doing other tasks), then this type of quizzing is appropriate.
   - Do: Some assessment experts suggest making each of these kinds of quizzes comprehensive over the information learned so far, to encourage ongoing review.
   - Do: Make the quizzes, weighted together as a group, a significant part (1/3?) of the semester grade, and then include one or more alternative assessments to give students practice in applying concepts and principles and measuring higher-order skills, weighting them according to their relative importance in the overall grade for the course.

High quality resources on these topics:

Angelo, T.A. & Cross, P. (1993) *Classroom assessment techniques: A handbook for college teachers*. San Francisco: Jossey Bass. (available in LRC/Library)

Walvoord, B.E. & Anderson, M.J. (2009) *Effective grading: A tool for learning and assessment*. San Francisco: Jossey Bass. (available in LRC/Library)

BYU Testing Center, How to Write Better Multiple Choice Questions: http://testing.byu.edu/info/handbooks/betteritems.pdf

Sample rubrics and free, online rubric-creation/editing tools:

http://rubistar.4teachers.org/
http://www.teach-nology.com/web_tools/rubrics
http://www.ncsu.edu/midlink/ho.html