

Test* Creation Strategies for Online Student

(Note: for the purpose of this presentation, the words *test*, *quiz*, and *exam* are used interchangeably.)

Until many of us began teaching online, we may not have examined deliberate instructional and learning assessment strategies. One of the most fascinating transformations occurs when we begin to make modifications in face-to-face classroom instruction, based upon our online teaching experiences. You may be thinking – “this presentation was about test creation strategies – so why not get to the heart of the matter?” The reason is that the instructor needs to design an environment conducive for learning. That environment begins with the syllabus, includes explicit value statements about academic honesty, and the careful selection of learning assessment techniques to maximize learning. The electronic monitoring capabilities in the online classroom should be made transparent to students. The technology needs of the novice should be addressed. The testing should help define the learning process. It also means that the instructor invites feedback from students to make incremental modifications in the teaching/learning process to maximize learning outcomes.

Syllabus

The syllabus should inform the learner about how their grades are derived. The proportion for the grade from tests/quizzes/exams should be explicit. Faculty who teach online generally use testing (formative and summative) as a component of the course grade because the online forum opens up opportunities for learning that differ from the traditional face-to-face classroom. In addition to the grading process, the academic honor code addressed in the syllabus. Doing so reminds the student about the instructor’s values and sets the tone for the expectation of honesty (Burrus, McGoldrick, & Schuhmann, 2007; Christe, 2003).

Transparency of Electronic Monitoring in the Online Classroom

The instructor has an obligation to make the monitoring of student activity and progress transparent to the student. Students should be made aware of the audit trail that is visible both to teacher and learner, for example, when the student accessed the course, times that they began and finished a test or quiz, and the number of attempts, and their grades for each attempt (Christe, 2003). This information could be introduced in a number of ways, for example, course frequently asked questions (FAQs) or as an online discussion item at the beginning of the course.

Needs of the Technology Newbie

The instructor also has the obligation to ensure that assessments test learning rather than the student’s capability of using technology. Providing the learner with a “test-run” in the testing environment is an effective way to work out technology issues that interfere with successful assessment of learning. Don’t assume that students automatically know how to use technology and that your assessments will work on any computer. Students don’t necessarily understand technology issues such as pop-up windows, type of web browser, and Java (Szyjko, B., personal communication, March 23, 2009). If technology fails, have a backup plan.

Promoting Testing as a Way of Learning

Design tests that assess the learner’s essential knowledge and skills for given course content. If using the multiple-choice test format, make sure that the questions are written at the application, analysis, or synthesis levels assess higher order thinking skills (Walvoord & Anderson, 1998). Provide the learner with rationales to correct and incorrect answers. Although writing rationales for answers can take a

considerable amount of time, students are less likely to “challenge” the instructor about missed questions. More important, students who take time to carefully review rationales for missed questions have an opportunity to self-assess their own test-taking skills. For example, they may determine that they “read too much information into” the question, misunderstood what the question was asking, or had knowledge gaps regarding essential terminology or key concepts.

In addition to writing multiple-choice questions to test higher order thinking skills and reinforce learning, some teachers are using gaming and simulation techniques to promote Blooms’ taxonomy levels, knowledge and comprehension. When gaming module set also include review questions, they can be packaged as a SCORM (Shareable Content Object Reference Model) and uploaded into WebCT. Students can be instructed to interact with the gaming tools and then take a test when they feel that they have mastered the learning content. Some instructors are using this testing approach in a pre-test/post-test format where they ask the students to take a pretest followed by interactive games such as fill-in-the blank, crossword puzzles, flash cards. The students take a test over the learning content afterwards. When the test in the SCORM module is designed to include the score in the grade book, the learner often is motivated to perform because they realize that the teacher can review their scores.

Gaming software, such as Hot Potatoes (<http://hotpot.uvic.ca/>), is free for use in non-profit educational institutions. Respondus StudyMate® Author (<http://www.respondus.com/studymate/samples.shtml>) is third party commercial software that allows instructors to create Flash animation games quickly and easily. SmithTech Camtasia Studio® (<http://www.techsmith.com/camtasia.asp>) and Adobe Captivate® (<http://tryit.adobe.com/us/captivate/>) allow instructors to create interactive learning using Flash video, audio, and simulations. Camptasia and Captivate are available for trial downloads. All gaming software mentioned can be used to create tests with feedback for learners and SCORM modules which can be uploaded into WebCT.

Academic Honesty in the Online Classroom

Expect academic honesty in the classroom. Make the statement in online discussion forums and chats. Consider including a statement about student honesty expectations before the beginning of each test/quiz. Some faculty include a student agreement re honesty as the first question for each online test. Clearly define your meaning of cheating. Differentiate the definition of cheating from collaborative and group work.

Information from the literature reports that academic dishonesty in the online classroom has similarities to the face-to-face classroom (Burrus, McGoldrick, & Schuhmann, 2007). There are two main types of academic dishonesty, (1) planned and (2) unplanned. Examples of planned dishonesty include deliberate plagiarism, use of cell phones for instant messaging of information, stealing an exam, and arranging for a stand-in to take an test or exam. Unplanned dishonesty occurs when a desperate student panics when confronted with the lack of knowledge to answer a question and either observes the answers of a fellow student, does an Internet search, or contacts a fellow student to obtain the answer.

Know who is at risk for academic dishonesty. Burrus, McGolrick, and Schuhmann (2007) report that the probability of cheating is augmented for students:

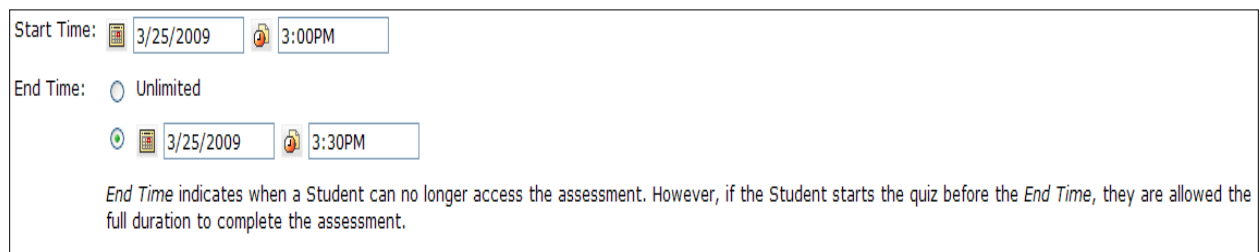
- With lower GPAs
- Who believe other students commonly cheat
- Who participate in alcohol consumption
- Who see others cheat
- With close relationships (e.g., fraternity/sorority memberships, athletic groups)
- Who perceive the severity of punishment as low

The instructor should plan for all high-stakes tests to be administered in a proctored environment (Krsak, 2007). For example, students may be required to come to campus for a proctored exam. If that is not feasible, the instructor should make alternative arrangements to assure a proctored environment. The National College Testing Association (NCTA) Consortium of College Testing Centers (CCTC) (<http://www.ncta-testing.org/cctc/>) provides proctored testing settings in order to facilitate distance learning. There are thirteen participating institutions in Georgia.

Minimizing Online Testing Dishonesty

Instructors should proactively plan the testing environment to minimize dishonesty (Christe, 2003). Strategies include:

1. Assume that all online testing in environments without a proctor to be “open book tests.”
2. Create tests with “question sets” so that all students do not have the same exact test.
3. Create several short timed tests rather than one longer one. For example use two 30-minute (see Figure 1) test rather than a 60-minute test.



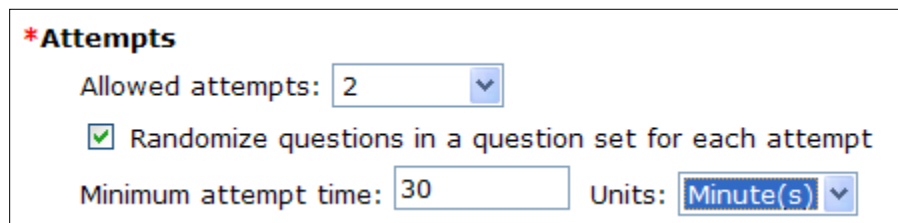
Start Time:

End Time: Unlimited

End Time indicates when a Student can no longer access the assessment. However, if the Student starts the quiz before the End Time, they are allowed the full duration to complete the assessment.

Figure 1 – Setting Time Limits for Test Taking

4. If the student is able to take the test more than once, control the number of times for any retakes (see Figure 2).
5. Randomize the question answers for multiple choice questions.



***Attempts**

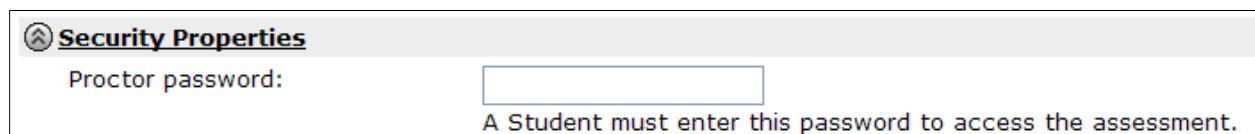
Allowed attempts:

Randomize questions in a question set for each attempt

Minimum attempt time: Units:

Figure 2 - Controlling the Number of Attempts

6. Consider alternative test question formats, for example, use short answer or essay questions.
7. Keep tests “hidden” until they are scheduled to begin.
8. Provide a proctor password-protect the test (see Figure 3). Give out the password just before the test begins, for example, using the announce feature in WebCT.



Security Properties

Proctor password:

A Student must enter this password to access the assessment.

Figure 3 - Setting a Password

9. Discourage printing of the test. For example, consider formatting the questions to be delivered one-at-a-time and/or allow the question to be visited only once (see Figure 4). Note: There is some “code” that you can include for quizzes that deters printing (See: <http://discussions.blackboard.com/jive4/message.jspa?messageID=94710>). Contact your WebCT Administrator for more information. Creative students can still print using the print screen function.

Question delivery

Deliver questions all at once.

Deliver questions one at a time and allow questions to be revisited.

Deliver questions one at a time and do not allow questions to be revisited.

Display question titles.

Figure 4 - Limiting the Number of Questions Delivered

10. If a proctored test is essential to meet the learning outcomes for the course, make arrangements. Some colleges and universities provide proctored testing environments. Some instructors have made arrangements with facilities with equipment and an environment conducive for testing, such as the public library. Make arrangements for the student to provide official college photo identification to the test/exam proctor.
11. Use the WebCT Assessment Manager to track the student (see Figure 5). It provides the student’s name, the date, time of logins, the number of attempts; the time spent taking the test, and the score(s).

Attempt	Score Out of 10	Time
1. February 10, 2009 11:26 AM ☰	7	00:11:54
2. February 10, 2009 11:30 AM ☰	10	00:02:54
1. February 10, 2009 10:55 AM ☰	8	00:14:10
1. February 2, 2009 7:22 PM ☰	7	00:16:56
2. February 2, 2009 7:34 PM ☰	10	00:01:43

Figure 5 - Assessment Manager Log

In the last column on the right (see Figure 6), the instructor can also click on any given attempt to view an audit trail of time spent on each question.

Date and Time	Access Type	Quiz Time	Time Spent *
February 3, 2009 7:36 AM	Assessment started	00:00	00:00
February 3, 2009 7:36 AM	Question 1 displayed	00:00	00:00
February 3, 2009 7:36 AM	Saved question 1	00:18	00:18
February 3, 2009 7:36 AM	Question 2 displayed	00:18	00:00
February 3, 2009 7:38 AM	Saved question 2	01:38	01:19

Figure 6 - Assessment Access Log

Summary

In summary, testing is design a complex process that should be addressed at the beginning of any course with the course syllabus. The instructor has an obligation to set expectations for an honest learning environment by stating the student's honor code and defining the term dishonesty as it relates to testing. Because testing should assess learning, the technology needs of the novice should be addressed and there should be backup plans for technology failure problems. Testing should be considered only one of many ways to assess student learning. High-stakes testing should be in a proctored environment. Other unproctored online testing should be considered equivalent to "open-book" testing in the face-to-face classroom. That said, the instructor should give careful consideration to design tests to minimize academic dishonesty.

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