**Educator's Voice**

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**Ways to prevent cheating on online exams**

When I visit different campuses, instructors invariably ask how to prevent cheating in online exams. Because instructors cannot monitor online exams by traditional means, such as active proctoring, cheating is a major concern for all eLearning instructors.

Many strategies have been discussed for preventing and detecting plagiarism in written work, but little research has been done on cheating prevention for objective exams. Many articles seem to say, “Don’t use exams, use a portfolio assessment method instead.” While we do recommend the use of several strategies for assessment in general, the fact remains that many instructors use exams as part of their assessment. After all, who can resist the siren call of multiple-choice exams that automatically grade?  And for some disciplines, such as science or math, objective exams are an ingrained part of the departmental culture and might be worth large portions of the grade. So no matter how valuable a portfolio approach may be, objective exams are still a necessity for many of us.  So, what to do? How do we make the most of our objective exams online?

Part of the problem is that our idea of what an exam should be is colored by our experiences in the traditional classroom. We might want to give the same exam, with the same questions, the same time limit, etc. And yet, we know that online courses are different. Courses must be designed differently for effective online delivery, and the same is true for exams. An instructor cannot have the same degree of control over the online exam environment that they have for traditional classroom exams. For this reason, we must re-design our exams (to the extent possible) to ensure that they are effective in the online environment.

Regardless of how much your exams are worth, if you use objective exams in your online courses, you could consider the following guidelines to help minimize cheating on your exams (see Adkins et al., Christe, Cizek and Olt for further discussion of some of these)

* **Write every exam as if it is open book.** As much as we try to convince ourselves otherwise, we need to assume that students use resources on their exams (the book, Internet search engines and so on) and write our exams accordingly. Are all of our questions asking for information that can be gathered quickly from the textbook or from a simple Internet search? Then we should re-think our questions (see following guideline). Open-book exams have the potential to test higher level thinking skills, instead of just memorizing facts. Unfortunately, scores on open-book exams are often lower, as students don’t take exam preparation as seriously when they know they can use their book, so training in open-book exam-taking skills would be helpful (Rakes).
* **Write effective multiple-choice exam questions.** Because it is so easy to use prohibited materials during online exams, it is foolish to design tests that simply test factual information that is easily looked up. Although it is difficult to do, online exams are most effective when they test higher order thinking skills (application, synthesis and evaluation) and ask questions that cannot be answered by glancing at the book or a quick internet search.  See Christe, Dewey and Rohrer for more information about developing quality multiple-choice questions.
* **Set tight time limits per question.** Even with open book exams (and especially for ones that are not open book), it is important to give a tight time frame for the test, so students will not have time to look up each question in the book. The time limit chosen will obviously vary depending on subject matter, type of questions asked, etc. For strict fact recall, instructors might start by giving a total time based on allowing 60- 90 seconds per question and then adjusting as necessary based on their student body. More time would need to be given for higher-level thinking questions or for those involving calculations.
* **Use large question pools to offer different, randomly-selected questions to each student.** See “Tip: getting the most out of exam question pools” for a good description of using question pools in the eCollege system. The question pools must be large enough to minimize overlap of questions between tests. Rowe provides a chart comparing the average number of questions in common for two students with different question pool sizes and different numbers of questions drawn from the pool. For example, 5 questions drawn from a pool of 10 questions results in 2.5 questions in common between two students, while 5 questions drawn from a pool of 25 questions results in only 1 question in common between two students. You can consult the mathematical formula or go with common sense: a larger question pool is better for reducing the likelihood that students will get the same questions.
* **Manually create different versions of the exam with the same general question pools, but with scrambled answers for each question.** For example, in one version of the exam, the correct answer could be B, while the answer choices are scrambled in the other version so the correct answer is D. You could use the Group function to assign half of the class to one exam, and the other half the class to the other one. Cizek cites research showing that scrambling questions and answer choices does reduce cheating, while simply changing the order of the same questions does not reduce cheating.  In fact, in a study of student’s perceived effectiveness of cheating prevention strategies, having scrambled test forms was the number one factor perceived by students to prevent cheating (Cizek).
* **Assign a greater number of smaller tests instead of one or two large ones.** This reduces the incentive to cheat, as each test isn’t as likely to make or break a student’s grade; the pressure of the midterm and final-only structure in some classes is a strong incentive to cheat on those exams. Also, this increases the logistical difficulties of cheating if a student is relying on someone else to help them or to take the test for them.
* **Provide a clear policy for what happens if students cheat… and enforce it!** There are many important things instructors can do from this perspective, such as discussing what constitutes cheating, the importance of academic honesty, any honor codes in place, what measures will be in place to prevent and detect cheating and the punishments for cheating. If students perceive that the instructor does not care about cheating, then incidents of both spontaneous and planned cheating increase (Cizek). Students know that most cheaters don’t get caught and that punishments aren’t harsh for those who do get caught (Kleiner and Lord). Research has found that punishment for cheating is one of the main deterrents to cheating (Kleiner and Lord).
* **Set the exam Gradebook Review Date for after the exam has closed.**  The Gradebook Review Date is when the students can access their graded exam in the Gradebook. If this date is set before the end of the exam, students who take the exam early could access their exam in the Gradebook (and usually the correct answers as well) and distribute the questions to students who would take the exam later.
* **Revise tests every term.** Sooner or later exam questions are likely to get out into the student world and get distributed between students. This is especially possible when students view their graded exams in the Gradebook, as they have all the time in the world to copy or print their questions (usually with the correct answers provided). Periodic changes to the test bank can help minimize the impact of this. Minor changes such as rewording the questions and changing the order of answers (especially if different versions with scrambled answers are not used) can help extend the useful life of a test bank.
* **Use ExamGuardTM** if the feature is available at your school. ExamGuard prohibits the following actions while students are taking online exams: printing, copying and pasting anything into or from the assessment, surfing the Web, opening or using other applications, using Windows system keys functions or clicking on any other area within the course. Also note that ExamGuard prohibits students from printing or copying exam materials while viewing the exam in the Gradebook.  If you are interested in learning more about ExamGuard, please contact your Account Executive or Client Services Consultant.
* **Give proctored exams in a traditional classroom.** While this is not an option for many online courses, it is a route that some schools take, especially if they largely serve a local population. With proctored exams, instructors feel more in control of the testing environment and more able to combat cheating in a familiar classroom setting (or at least to have cheating levels on par with those seen in a traditional exam setting). In a study on cheating in math or fact-based courses, Trenholm concludes that proctoring is “the single greatest tool we presently have to uphold the integrity of the educational process in instruction in online MFB (math or fact based) courses” (p. 297).  Also, Cizek showed that attentive proctoring reduced cheating directly and by giving the impression that academic integrity is valued.

If you’re anything like me, you might feel overwhelmed right now by the possibilities for minimizing cheating in online exams! If you do decide to implement any of these strategies, remember that it’s ok to start small and continually work to update your exams. It’s sometimes easy to forget about our exams, as they run term after term with minimal set-up or grading effort on our part. However, exams (like many aspects of your class) are never finished and need to be consistently updated to keep them fresh… and to keep them as a valuable learning tool instead of an excuse to cheat.

– Gail E. Krovitz, Ph.D.

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Hybrid course delivery, sometimes called "blended," refers to courses of instruction that require students to meet for face to face classes while providing much of the course content and interaction online via course delivery software and instructional tools. Hybrid programs refer to programs of study that provide students with an option of taking some courses fully online and some in class, or hybrid. Effective hybrid course instructional design blends classroom and online methodology and is based on student-directed instruction (as is typical in a distance learning environment), effective and timely teacher intervention, peer to peer interaction, and multiple input sources in a highly interactive learning context. The hybrid model depends on full student and teacher participation and on an instructional design that intentionally supports both specific learning outcomes and flexible delivery.

I became involved with hybrid teaching simply as a common-sense approach to the challenge of transitioning traditional faculty from classroom to online learning environments while I was director of a center for instructional technology at a university in the South. The challenge that faced me was working with faculty who were almost completely resistant to the idea of distance learning via the Internet, believing it to be a diminished learning experience. Many faculty also demonstrated a fear of technology in general and saw it as potentially time-consuming and overwhelming. The faculty were not, however, resistant to the idea that technology might be helpful in some way to support learning outside the classroom, as well as provide ongoing discussion opportunities between students.

In order to try and address some of these issues and to learn how to transition resistant faculty, I thought I should design my courses in a blended design to help understand how the two worlds could meet for faculty in a recognizable fashion. As a result, I designed all of my courses in a hybrid design and began, over a period of almost eight years, to develop a methodological framework. My focus was to look at how the design and the use of technology could heighten the engagement of the students in their learning process.

While my involvement with hybrid evolved from a sense of logical progression, many institutions of higher education are moving toward hybrid programming and hybrid course delivery intentionally to provide more flexibility for on ground students and to increase the overall marketability of programs of study to potential students. My sense is, however, the main benefit to hybrid from a teaching and learning viewpoint is that it provides an opportunity for the learning process to become much more engaging for students and for students to drive the learning process more directly. It is also an effective way to increase students' learning autonomy (Reynard, presentation at Middle Tennessee instructional technology conference, 2006). In other words, with the integration of the Internet both to deliver and to mediate the learning process in combination with face to face contact with others students and with the instructor, hybrid provides a meaningful opportunity to bring together the best of both worlds, so to speak.