Rethinking Assessment in Online Teaching

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Exams (particularly multiple-choice exams) are understandably a go-to assessment measure for many instructors, particularly when they need to assess the learning of a large number of students. However, when teaching in an online environment, fears about academic integrity can become magnified by the opportunity for students to Google answers casually and without detection. While undeniably valuable, proctoring services for online exams can be expensive and create undue anxiety for honest students; furthermore, they are certainly not fool-proof, and bring with them a new set of technological requirements and costs that outweigh the minor benefits. What follows are some pedagogically-sound design suggestions for online exams that can diminish the potential for and impact of academic dishonesty, as well as alternative assessment methods for consideration by faculty who are teaching online *or* face-to-face.

But first, remember this: When deciding on assessment strategies, you always keep in mind the learning goals for the course and ensure that your chosen assessments align with those goals. What's more, it is essential to conceptualize assessment as an integral part of the learning process rather than simply a set of hoops for your students to jump through so that grades can be assigned. Assessment doesn't have to be an "us vs. them" situation!

DESIGN CONSIDERATIONS FOR ONLINE EXAMS AND QUIZZES

Timed, open-book tests

BENEFITS: Why not lean into the online testing environment and embrace the students' capacity to access course materials and other resources? Open-book tests obviously allow students to have text and online material available for reference, which undermines the impact of cheating and ultimately mirrors what happens in a "real world" situation, thereby cultivating in students some authentic problem-solving and decision-making skills that will be useful beyond the classroom. Research has also shown that open-book tests can enhance student motivation, satisfaction, and performance.

SUGGESTIONS FOR IMPLEMENTATION

- Questions should be complex and require students to know the material as well as where to look if they are uncertain about something.

- Design questions that go beyond simple recall and repetition, requiring analytical and application skills.

- Construct questions that draw specifically on class notes and content, rather than broad questions that might pop up in sites like Wikipedia.

- A timed window for completion (such as 60 to 90 minutes) ensures that ill-prepared students will not be able to just blindly search the texts for the "right answers." (Well-designed open-book tests will likely confound students who haven't been doing the work all along!)

- A timed window of test availability (24 hours, for instance) also complicates the ability of students to share or collude.

- It is also beneficial to encourage students to use a hard-wired internet connection, *if possible*, to reduce incidences of lost work that might occur with unreliable wifi connections.

- Be transparent with students and explain that you know (and perhaps expect, or even encourage) that they will look things up online; remind them that the questions will be challenging, and that advance preparation and keeping up with course material is still required for success.

ADDITIONAL RESOURCES

- [Why Open-Book Tests Deserve a Place in Your Courses](#)
- [Using Open-Book Exams to Enhance Student Learning, Motivation, and Performance](#)
- [Open Book Exams – A Guide for Academics](#)

A series of quizzes or shorter chapter/unit tests in place of one or two comprehensive major exams

BENEFITS: More frequent assessment has been shown to improve learning and retention (i.e., the "testing effect"), as well as fosters better organization of knowledge, better study habits, and provides both students and teachers more frequent feedback about student learning, in turn allowing instructors to adjust their teaching accordingly; more frequent quizzes/exams also create lower stakes for students, thus alleviating anxiety and some of the pressure to cheat.

SUGGESTIONS FOR IMPLEMENTATION:

- Include 1 or 2 questions from previous units to foster student retention and implement [“the spacing effect.”](#)

- Avoid assessment fatigue in your students; you don't need to quiz them every day or test them every week. Instead, you might aim for quizzes on every module, or 4-5 exams that might cover 2 chapters or major units apiece.

- More frequent testing means more frequent grading, but some auto-grading features in Canvas could help alleviate that. Shorter quizzes/tests should likewise ease the grading process.

ADDITIONAL RESOURCES

- [Students Should be Tested More, Not Less](#)
- [A Case for More Testing: The Benefits of Frequent, Low-Stakes Assessments](#)
- [Testing Effect in Learning Theory](#) (This video could also be useful for students)
- [Developing Test Items for Course Examinations](#)

Randomized/ shuffled sequences of test questions and answers, or multiple (but equitable) versions of exams

BENEFITS: Student attempts to collaborate by sharing quick answers, particularly in real time, will be complicated by the varied sequences and/or different questions.

SUGGESTIONS FOR IMPLEMENTATION

- For courses that require calculations, change the numbers to be utilized among various versions of the test.

- If utilizing randomized questions to create multiple versions of an exam, be mindful that selected questions demonstrate equivalent levels of difficulty and draw on equivalent skills from version to version.

- It is good practice to vary and/or modify your exam questions from semester to semester to diminish the value of shared test files that some students might access. (And studying old exams in and of itself is not necessarily lacking in academic integrity!)

- If the prospect of developing a large number of exam items feels overwhelming, why not look to your students for help? Task them with developing some potential exam questions for consideration – with some guidance from you, of course!

ADDITIONAL RESOURCES

- [Randomizing quiz questions in Canvas](#)
- [Thwarting online exam cheating without proctor supervision](#)
- [Using student-generated questions to promote learning](#)

Allowing optional multiple attempts at lower-stakes assessments

BENEFITS
Allowing students multiple attempts at a quiz has been shown to reduce text anxiety as well as the desire to collude, while building goodwill and offering students an opportunity to engage in recursive learning, and thereby improve understanding. This strategy also harnesses the power of the testing effect.

SUGGESTIONS FOR IMPLEMENTATION

- You may choose to limit the number of allowable attempts or allow students to make as many attempts as they desire.

- You may choose to record only the score of the most recent attempt, or the highest score regardless of its position in the sequence of attempts.

- A particularly good strategy is for each iteration of the quiz to include different questions over the same material, if possible, to cultivate and measure learning of the material rather than memorization of the questions.

ADDITIONAL RESOURCES

- [What options can I set in a quiz?](#) (Canvas guide)
- [Giving students multiple attempts to improve test scores provides a powerful learning opportunity](#)
- [An Integrated Approach to Preempt Cheating on Asynchronous, Objective, Online Assessments in Graduate Business Classes](#)

NON-EXAM ASSESSMENT IDEAS

One pedagogical principle to keep in mind is that **employing multiple measures** can provide more accurate, valid, and well-rounded assessment by giving students a variety of opportunities and methods by which to demonstrate their learning. In other words, instead of only asking students to complete a battery of tests over the course of the semester, you might consider weaving in additional assessment modalities, both formative and summative, to allow students to demonstrate what and how they learn in a variety of ways. (See also [More is More: Multiple Measures for Better Assessment .](#)) You might also consider incorporating **authentic assessment** measures, or those that ask students to perform real-world tasks that demonstrate meaningful application of what they have learned to new situations. Authentic assessments require students to engage in complex, even messy situations and demonstrate judgment and evaluation of what skills are necessary to complete the task. Authentic assessments are likely to be more valid measurements, particularly of higher-order skills, as well as more interesting, meaningful, and relevant for students. Better yet, research shows that students cheat more on tests and exams than when tasked with authentic assessments (Palloff & Pratt, 2013). (For more information on authentic assessments, see the [Authentic Assessment Toolbox](#) or [this page from IU-Bloomington](#).) Below are just a *few* ideas for assessment strategies to augment or replace more traditional exams, whether in online or face-to-face learning environments.

And one more reminder: when employing non-exam assignments such as those listed here, the inclusion of a clear evaluation rubric that delineates criteria for student success and provided to students well in advance of the assignment is strongly recommended. For more information on effective rubric design, please see this article on [the benefits of rubrics in online classes](#), and this list of [quick guidelines for best practices in rubric design.](#)

Performance - based assignments:

- Individual student or group presentations (live or recorded)
- Student debates using online meeting platforms
- Recorded podcasts
- Recorded or live interviews using video-conferencing platforms
- Recorded illustrations
- Demonstrations using online tools such as [Seesaw](#) , [Flipgrid](#), [Powtoon](#), or [Buncee](#)

Assignments that require problem-solving, critical thinking and analysis:

- Case study analysis and response
- Chart, graph, or diagram with explanation
- Analysis of an image, advertisement, website, etc.
- Legal brief
- Business plan
- Review of a book, play, performance, etc. (students can watch online versions)
- Policy memo or executive summary
- Concept map
- Diagram, table, chart, or visual aid
- Design an experiment
- Peer reviews

Writing-based assignments beyond the traditional, long term paper that require similar skills:

- Annotated bibliography
- Literature review
- Letter to the editor, Congress member, etc.
- Executive summary
- Brief response papers
- Research proposal addressed to a grant agency
- Newspaper article or editorial
- Scientific abstract
- PowerPoint or Prezi slides (or other similar tools)
- Class or group wikis

Assignments that exercise students' creativity:

- Brochure or advertisement
- Podcast
- Development of a product or proposal (perhaps to be judged by external judges, or voted on by classmates)
- Infographic
- Journal for a real or fictional character
- Letter explaining a problem or concept
- Poem, play, or dialogue, etc.
- Web page, blog, vlog, or video
- Photo essay
- Work or portfolio of art, music, architectural plans, etc. (Padlet or Flipgrid could work well for these!)

REFERENCES and RESOURCES

- A guide for academics: Open book exams. Centre for Teaching and Learning, University of Newcastle. Australia. https://www.newcastle.edu.au/__data/assets/pdf_file/0006/268980/Open-Book-Exams.pdf
- Alternatives to traditional exams and papers. Center for Innovative Teaching and Learning, Indiana University Bloomington. https://citl.indiana.edu/teaching-resources/assessing-student-learning/alternatives-traditional-exams-papers/index.html
- Arcuria, P., and Chaaban, M. (2019). Best practices for designing effective rubrics. Teach Online. Arizona State University. https://teachonline.asu.edu/2019/02/best-practices-for-designing-effective-rubrics/
- Authentic assessment. Center for Innovative Teaching and Learning, Indiana University Bloomington. https://citl.indiana.edu/teaching-resources/assessing-student-learning/authentic-assessment/index.html
- Boye, A. (2010). How do I create meaningful and effective assignments? Texas Tech University. https://www.depts.ttu.edu/tlpdc/Resources/Teaching_resources/TLPDC_teaching_resources/CreatingEffectiveAssignments.php
- Boye, A. P. (2019). Writing better essay exams. IDEA Paper# 76. Manhattan, KS: IDEA Center, Inc. https://www.ideaedu.org/idea_papers/writing-better-essay-exams/
- Cluskey Jr, G. R., Ehlen, C. R., & Raiborn, M. H. (2011). Thwarting online exam cheating without proctor supervision. *Journal of Academic and Business Ethics*, *4*(1).

- Conrad, D., & Openo, J. (2018). *Assessment strategies for online learning: Engagement and authenticity*. Athabasca University Press.
- Davis, G. (2016). The benefits of rubrics in online classes. Wiley Education Services Center for Teaching and Learning. https://ctl.wiley.com/the-benefits-of-rubrics/
- Farrell, M. and Maheu, S. (2019). Why open-book tests deserve a place in your courses. *Faculty Focus.* https://www.facultyfocus.com/articles/educational-assessment/why-open-book-tests-deserve-a-place-in-your-courses/
- Green, S. G., Ferrante, C. J., & Heppard, K. A. (2016). Using open-book exams to enhance student learning, performance, and motivation. *Journal of Effective Teaching*, *16* (1), 19-35.
- Haladyna, T.M. (2018). Developing test items for course examinations. *IDEA Paper 70*. https://www.ideaedu.org/idea_papers/developing-test-items-for-course-examinations/
- Hughart, R. (2019, Dec.). 3 alternatives to classroom presentations. *Teach Better*. https://www.teachbetter.com/blog/3-alternatives-to-classroom-presentations/
- Joseph, M. (2019, May). Moving to dynamic learning. *Teach Better*. https://www.teachbetter.com/blog/moving-to-dynamic-learning/
- Kelly, R. (2014). Alternative assessment methods for the online classroom*. Faculty Focus*.
- Krsak, A. (2007). Curbing academic dishonesty in online courses. In *TCC* (pp. 159-170). TCCHawaii.
- Luebben, Aimee. (2010). Giving students multiple attempts to improve test scores provides a powerful learning opportunity. *Faculty Focus*. https://www.facultyfocus.com/articles/educational-assessment/giving-students-multiple-attempts-to-improve-test-scores-provides-a-powerful-learning-opportunity/
- Maddox, E. N. (1990). The use of student-generated examinations: guidelines, benefits, and cautions. *Organizational Behavior Teaching Review*, *14*(2), 63-69.
- McDaniel, M. A., Wildman, K. M., & Anderson, J. L. (2012). Using quizzes to enhance summative-assessment performance in a web-based class: An experimental study. *Journal of Applied Research in Memory and Cognition*, *1*(1), 18-26.
- Millis, B. J. Using student-generated questions to promote learning. *Breaking Barriers in Teaching and Learning*, 3.
- Mueller, J. (2018). Authentic assessment toolbox. http://jfmueller.faculty.noctrl.edu/toolbox/whatisit.htm.
- Muller, K., Gradel, K., Deane, S., Forte, M., McCabe, R., Pickett, A. M., Piorkowski, R., Scalzo, K., & Sullivan, R. (2019, October). Assessing student learning in the online modality (Occasional Paper No. 40). Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA). https://www.learningoutcomesassessment.org/wp-content/uploads/2019/10/Occasional-Paper-40.pdf
- Osborn, L, and Neill, J. (2005). Performance assessment in online learning. 19th Annual Conference on Distance Teaching and Learning. University of Wisconsin, Madison.
- Palloff, R. M., & Pratt, K. (2013). *Lessons from the virtual classroom: The realities of online teaching*. 2nd ed. San Francisco, CA: Jossey-Bass.
- Shaw, A. (2019). Authentic assessment in the online classroom. Wiley Education Services, Center for Teaching and Learning. https://ctl.wiley.com/authentic-assessment-in-the-online-classroom/
- Sullivan, D. P. (2016). An integrated approach to preempt cheating on asynchronous, objective, online assessments in graduate business classes. *Online Learning* 20 (3) 195-209.
- Sun, D. L., Harris, N., Walther, G., & Baiocchi, M. (2015). Peer assessment enhances student learning: The results of a matched randomized crossover experiment in a college statistics class. *PloS one*, *10*(12).
- Villarroel, V., Bloxham, S., Bruna, D., Bruna, C., & Herrera-Seda, C. (2018). Authentic assessment: Creating a blueprint for course design. *Assessment & Evaluation in Higher Education*, *43*(5), 840-854.
- Wiggins, G. (1990). *The case for authentic assessment*. Washington, DC: ERIC. Retrieved from http://eric.ed.gov/?id=ed328611.