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## Online Exams: The Need for Best Practices and Overcoming Challenges

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The potential of online courses cannot be fully achieved by the simple transfer of traditional classroom methods, particularly when giving exams. As the prevalence of online classes continues to increase, many faculty moving from the traditional classroom and teaching these classes for the first time may not be aware of the challenges they could face when students are taking exams. With any course and with any exam, the goals include how to best assess the knowledge students should acquire, and how to prevent unethical behavior that may jeopardize the academic integrity of the exam and course. In an online environment, students often take exams on their individual electronic devices (i.e. cell phones, iPads, computers, tablets, etc.), in their own homes. As a result of this testing environment, there is potential for unethical behavior by students. So, how do faculty minimize, if not eliminate, this possibility? There are a number of sources and strategies available to faculty to address this issue.

Multiple sources are available to assist faculty with online course development including the development of online quizzes and exams. For example, California State University- Sacramento, (Academic Technology and Creative Services, Spring, 2014), and Stanford Medicine Information Resources and Technology (2016), offer a number of general guidelines. There are other online publications (Cerritos.edu, Prometric.com), that emphasize strategies to minimize unethical behavior in an online environment. Other reports such as Faculty Focus Special Report- "10 Principles of Effective Online Teaching: Best Practices in Distance Education" (Ragan, 2017) and "Best Practice Strategies to Promote Academic Integrity in Online Education" Version 2.0 (UT Telecampus; Western Cooperative for Educational Telecommunications, Partners for Change, Technology in Practice, Advances in Education, Instructional Technology Council, 2009) provide quality information on best practices. Lastly, a faculty member's home institution probably offers guidelines if there is a Distance Education Department. Although there are a number of strategies to limit the possibility of unethical behavior on online exams, this paper will address the specific methods I utilize for my online quizzes and final exam.

### **The Need for Best Practices**

Every spring semester, I teach an upper-level online course at a medium sized university in the North Georgia region. Until spring, 2016, I was not employing any of the strategies discussed in this paper. In this online course, I gave 8 quizzes and 1 final exam. I created each of these based on my reading and research of the topics presented in the textbook and discussed within the course. So, the questions and answers on the quizzes and final exam were my creation. I

do not use “Test Banks” provided by publishing companies for a number of reasons, but the primary reason is because I am aware these test banks are available on the web to students. I believed, erroneously, that since the course was offered only once a year, it was an upper level course and I did not use test banks, my quizzes and final exam were safe from any type of unethical behavior by students.

When I give quizzes online, once all students have completed the quiz and submitted it, I hand grade the fill-in-the-blank and short answer questions because there are always errors. For example, students may misspell words or not answer exactly the way I have worded the responses (i.e. I take short notes; ask opinions, etc.), and the computer will count these answers as wrong. For semesters up until Spring, 2016, once I had hand graded the quizzes and posted student’s scores in the grade book, the students were then allowed to go in and see the quizzes, their answers, and all of my correct answers and responses so they know what they missed and why.

In the spring semester 2016, when I was teaching this online course, I began to notice some interesting “coincidences”. On the first quiz, I noticed 2 students had short answer responses that were incredibly close to my wording for the correct response. Although the computer counted the answers as wrong, I was suspicious the students had somehow gotten my answers, but I had no idea how. On the second quiz, I noticed 3 students had short answer responses that were identical to my responses (i.e. they cut and pasted misspelled words and all). After some investigation with the help of the University’s Distance Education department, I realized that a Quizlet (Quizlet.com) had been created by a student in the spring, 2015 course. In that Quizlet, the student copied all of the questions from my quizzes and final exam and posted them as her study guide (this document included over 250 questions I had created for my course). Once she did this, the information in this document became an open, public document. Anyone could “Google” a question or could log into Quizlet and see all the questions and answers.

According to the Quizlet website, Quizlet (2017) is the world’s largest student and teacher online learning community. The mission of Quizlet is to help students (and their teachers) practice and master whatever they are learning. As a resource for both students and faculty, Quizlet can be very beneficial. According to their statistics, every month, over 20 million active learners from 130 countries practice and master more than 140 million study sets of content on every conceivable subject and topic. For me, though, the Quizlet entry represented a theft of my intellectual property, and it compromised the entire academic integrity of my course. As a result, I had to rework and redesign the course mid-semester. This

experience compelled me to explore and ultimately utilize the best practices I should have been using from the beginning.

### **Best Practices**

After experiencing this type of academic misconduct by a student in my online course, I was forced to devise and employ the strategies discussed in this paper. Although there is no foolproof way to completely prevent cheating on an online exam, these strategies can increase the security of the exams and reduce the likelihood of cheating. At my institution, the learning management system is D2L.

To begin with, when developing quizzes, I create all of my questions from the information directly in the textbook. I do not use test banks or publisher's information. The primary motivation for this, (as discussed earlier in the paper) is the fact that a lot of published instructors' materials are available on the Web, and if students are diligent and know where to look they can gain access. In addition, my quizzes and final exam are all open book and open notes. I allow the students to use their textbooks and notes primarily because I believe they will use them anyway in an unmonitored or un-proctored setting. Also, if I allow students to use their textbooks, I am better able to detect whether students use other unauthorized sources (i.e. they search the web on another device such as their cell-phone).

Once I have created all of the questions on a quiz, I restrict the quiz so students are allowed to only see one question at a time. Once a student answers the question, they are able to move on. Once a student answers a question, the student is not allowed to go backwards in the quiz or toggle back-and-forth between questions within the quiz. Students are forced to move forward only. They answer a question, and then move on to the next. In addition, on each quiz I also ask short essay questions that require comprehension of the material as well as ask their opinion on the particular topic. This makes it more difficult for students to cheat because they have to critically think, apply information and they cannot easily use other student's opinions.

Students are given a set amount of time for their quiz. Generally, I allow students 90 minutes to complete a quiz with 20 fill-in-the blank and 5 short answer questions. This protects the integrity of the quiz in a few ways. First, if students have a set period of time, they are less able to use other technology to assist them. They don't have time, for example, to take pictures of the exams or use unauthorized sources for answer searches. Second, this also limits the option of contacting other students in the class for help. Lastly, if students have a specific

amount of time, they cannot exit the exam, look up answers, and then go back into the exam.

With the quizzes and final exam, I require a forced completion. Once a student begins, they must finish. Students cannot start a quiz or exam, get interrupted, and then come back to it a day or two later. Once the student begins, they have only the designated time period to complete and submit the quiz for grading. Once the time period runs out and/or the quiz is submitted for grading, the student cannot get back into the exam. Although I allow 90 minutes for a quiz, the students are allowed to take their quiz anytime during a 1 week period. To me, allowing students to take a quiz when it best fits his/her schedule is a major benefit to online classes. While I employ this strategy, other online colleagues feel this is too generous. One criticism is that a student could take the quiz Monday, and then give answers to another student who then takes the quiz later in the week. One remedy for this is to provide students with a shorter window for taking the quiz (i.e. all students must take the quiz within a 24 hour period). This could possibly make it more difficult for the students to share answers.

For students taking quizzes, I disable the right-click option. According to John Williams, my institution's Instructional Technology Systems Administrator, in the D2L Learning Management System, the right-click option offers a variety of commands including copying and pasting. By disabling this option, I am preventing the student from copying and pasting. In other words, disabling the right-click, cancels the ability to highlight any text within the quiz. This prevents the student from copying the exam and pasting it into a Word or Document file to share with others (personal communication, October 2016).

I also require students to use the Respondus Lockdown Browser. According to John Williams, my institution's Instructional Technology Systems Administrator, the Respondus Lockdown Browser is a customized browser that increases the security of online exams. It prevents students from printing, copying, going to another website or accessing other applications during an exam. Therefore, the program "locks down" the computer so the student cannot access anything other than D2L (personal communication, October 2016). One critique I have of this feature, is that at my institution, students are not allowed to download this browser on university computers. So, students who rely on a school computer to take their quizzes, must look for another option. Practically speaking, students must have their own device or at least access to some other personal device to take the quizzes. Because Respondus only "locks down" the computer the student is

using, it doesn't prevent students from using some other device as a "resource" when taking the quiz in a non-proctored environment.

I do not release any student's test scores until the availability period for the quiz is over. All students finish their quizzes and once they have all finished I grade them. Depending on the information a faculty member chooses to release, if you grade and release the scores as soon as each student finishes, the student who finished the quiz first has access to questions, answers and feedback that they could provide to other students. To eliminate this possibility, I don't grade the quizzes until all students have finished and submitted their work. Therefore, student's scores are not available immediately upon completion of the quiz.

Once I have graded the quizzes I only release information to students if they answered questions incorrectly. Students are only allowed to see what questions they missed and why. They are not allowed to see all questions or questions answered correctly. This practice is ok, but it is recommended that students not be allowed to see any of their answers. If this is the case, then faculty should provide some sort of feedback to students so they have an idea of what they need to focus on or improve. For example, a faculty member could provide feedback that the student should focus on specific terms, illustrations/examples, elaboration, etc.

At my institution, the students taking an online course are required to participate in at least one proctored activity. In my class, the final exam is the proctored activity. The students know at the beginning of the class (it is stated clearly in the syllabus) that the final exam is a proctored activity and every student will take the exam at the same time. This is the only instance within the course when students must participate in the class activity. Students who wish to travel to my home campus take the final exam with me in a computer lab. When they arrive in the computer lab, I check their identification and then allow them to log into the course to take the exam. I utilize all of the strategies for the final exam that I use for the quizzes throughout the semester, regardless of where the student takes the final exam.

Students who do not wish to travel to my home campus are allowed to take the final exam through Proctor U. Proctor U (2017) is an online testing service that helps protect the academic integrity of online programs. In addition, Proctor U offers digital solutions, including identity and exam management that are designed to address the most common challenges of the academic integrity of online programs. If students choose this option for the final exam, they must register for the final exam in Proctor U. Once registered, they are ready to take the final exam

on the specified date and time. The administrators at Proctor U, proctor these exams. When the exam period begins, students must have a working webcam and the Proctor U representatives monitor the student's behavior through their camera. In addition, prior to beginning the exam, students must show the proctor their student ID.

I also have Proctor U exams password protected. Sometimes, the proctor gives the password to the students verbally once they are ready to begin the exam. According to my Proctor U faculty representative, the password is recommended as an added layer of academic integrity, because it ensures that students cannot access the exam without the proctor. Other times, through the screen sharing application in Proctor U, the proctors are able to manually enter the password for the student, so the student just sees it as stars or asterisks on their end (personal communication, February 2017).

The third option for the final exam is for students to take it through an approved testing center at the University. Students are allowed to go to the approved site, and a proctor at the testing center will monitor the exam. The student's identification is checked prior to starting the exam, and the same strategies for academic integrity are utilized.

Although I do not utilize other strategies to minimize unethical behaviors on online exams, there certainly are others. For example, faculty could randomize questions and responses for each question. They could create a large test bank and use different questions for different semesters. They could use an "auto-submit" option which will automatically submit the exam once the time limit has been reached. Once the exams have been submitted, faculty could review exams with students online, one-on-one during office hours.

Lastly, and on a somewhat higher level, faculty could specifically articulate the student's ethical responsibilities. Before the class begins, faculty could create a "Code of Conduct" that outlines the expectations for the course, what constitutes a violation in the code of conduct (define cheating and clearly state what is considered dishonest and/or unacceptable) and consequences for the student if the code of conduct is broken. This document would clearly articulate the student's ethical responsibilities. Instructors who do not want to create an individual, specific code could use their university's code of conduct or academic integrity policy. Once the policy is in the course, faculty should discuss the policy with students early in the course. It is also a good idea to publish guidelines (or direct

students to the university academic integrity policy) for the handling and reporting of any student infraction (WECT, University of Texas Telecampus and Instructional Technology Council, 2009).

In conclusion, computer based exams have an added layer of risk associated with exam security (Prometric, 2017). Although there are no “fool-proof” ways to protect the integrity of an exam, the strategies discussed in this paper outline a number of measures to reduce the risk of cheating and other forms of academic misconduct. Utilizing some (or all) of the strategies discussed will contribute to a more ethical online environment where students and faculty benefit. Faculty must move away from their traditional classroom methods and embrace new methods for success in an online teaching and learning environment.

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