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Student Equity: Discouraging Cheating in Online Courses

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As online programs at conventional universities continue to expand, administrators and faculty face new challenges. Academic dishonesty is nothing new, but an online testing environment requires different strategies and tactics from what we have had to consider in the past. Our university has recently adapted successful face-to-face programs in financial management, both graduate and undergraduate, for delivery in a fully-online format. This paper discusses our experiences moving to a new environment, the challenges of student attempts to cheat and plagiarize, and techniques that we have found to prevent both cheating on high-stakes assessments and plagiarism. We present a number of essential ideas for creating an awareness of an honesty culture among both students and faculty, and we stress that the most important aspect of any campaign against academic dishonesty is prevention.

Keywords: *academic integrity, academic dishonesty, cheating, plagiarism, online assessment, high-stakes assessment*

INTRODUCTION

We began planning and designing for the BS Finance and MS Finance online programs in the spring semester of 2008 for delivery in select courses beginning in fall 2009. Our MBA program was mostly available online, but our department was not fully part of the “online” faculty at that point. Most of us had limited experience with actual testing online, but we were very familiar with learning management systems and the online delivery of materials.

Student Equity

Our overriding design principle was student equity. In looking at the universe of online courses and experiences, and in talking with other faculty, students, and employers here and elsewhere, we discovered that a chief concern with online classes was their rigor and consistency. Our primary challenge would be to make sure that we applied the same learning objectives, resources, and expectations to the online sections of our courses because we would likely be teaching online and face-to-face sections simultaneously. We wanted to avoid creating arbitrage opportunities over different modalities and semesters.

We wanted to make sure that students were given the same access to knowledge in both types of classes, and we wanted to make sure that the classes were the same difficulty level. Having an easier online course, for example, would not only leave those students unprepared for later courses and the working world, but it would create an equity imbalance with those students in the face-to-face class. Each modality had its own challenges, to be sure, but we felt that keeping honest students “whole” throughout should be one of our most important considerations.

Our resulting course designs reflect this principle. To every extent possible, we have mirrored the face-to-face expectations and content in the online sections, and this has actually enriched our face-to-face courses in many ways. We also decided early in the process that we would try to limit the “noise” in our courses out of respect for our students’ capacity to absorb only so much new information each week. The idea that students (and faculty) have a limited

bandwidth with which to absorb material kept us to only the essentials for learning the existing material and kept us focused on learning objectives. This was at odds with our assigned instructional designers, who felt that a variety of tasks should be assembled to allow students with different learning styles to engage the course differently. Our decision has allowed us the freedom to add material and activities as we have seen the need for them over time.

We rewrote our notes to be clearer and more detailed, redesigned PowerPoints to be free-standing (not requiring clarification through discussion if possible), and we figured out how to podcast our lectures, problem sets, and current events discussions throughout the semester. We grappled with technology for presenting material online, finding by trial and error that Adobe Acrobat was much more robust than Microsoft Word or PowerPoint. We also worked very hard to keep the courses tied to our individual teaching styles because “branding” in this manner seems important and valuable to students and it appears to be one of the few ways that we can keep some semblance of control of our intellectual property in an online environment as well.

Our final challenge, and the most demanding one so far, has been to address the problems of academic dishonesty, including cheating on exams, plagiarism on exams, and plagiarism on other written assignments. We worried about both panic (opportunistic) cheating and planned cheating, and we have seen evidence of both (along with defensive cheating). The most important thing that we have learned is that there is no single secret to dealing with cheating; managing academic integrity requires a great deal of imagination and a great deal of hard work on the part of the teaching faculty. If given the chance, unfortunately, we have found that a small percentage of students will cheat at every opportunity. For the valuable reputation of a program or school, “a few” appears to be damaging enough to make an impact.

Prevention versus Prosecution

Often the question of what to do about the risk of cheating involves determining whether we are trying to prevent and/or discourage, simply catch, or catch and prosecute students who have chosen to behave in a certain proscribed manner. As might be expected, the burden of proof can at the same time be very simple with plagiarism cases and very difficult with other types of dishonesty. There is an additional consideration of the cost in time and effort: faculty members already spend a great deal of time on assessment, and dealing with dishonesty just adds to the list of tasks. Each university has a different system for prosecuting suspected dishonesty cases.

The methods we advocate in this paper will vary in their efficacy in preventing and punishing, but it has been very clear in our experience that the majority of the time our efforts have paid off the most in prevention, in student awareness, and an improvement of student preparedness and outcomes. For us, having just been through the implementation phase of several large online programs in financial management, it has been less important that we successfully prosecute suspected cheaters than whether we have changed the expectations of the students, faculty, and alumni at our university. We have been able to catch and punish many students since we started using the techniques we outline here, but more importantly there has been a culture-level awareness that online courses are important and valued within the finance curriculum and within the School of Business. Our efforts have also been recognized at the university level and have led faculty in other programs to engage in dialogue about academic integrity and student outcomes across a wide spectrum of issues.

Student Awareness

The most important considerations for faculty, students, and administrators must be creating awareness of the problem. Establishing a successful learning culture requires a constant respect for academic integrity and an understanding of what that means. If students can understand why it is that we promote integrity within academia, they are more likely to subscribe to its tenets. Additionally, they are more likely to be able to take pride in their work. In a culture that seems to value the importance of building each student’s self-image, it would make sense to take every opportunity to prevent and discourage students from toxic behaviors, such as cheating and plagiarism. If we truly respect our students and their needs, we will allow academic integrity to have a very large role in what we do. If we do not actively demonstrate that there is value in academic integrity, we can easily undermine all of our other current efforts and also undo much of the progress our profession has made in creating better student outcomes over the past several generations.



LITERATURE REVIEW

A central discussion in the existing literature about online course design focuses on academic integrity, plagiarism, and other cheating issues. Student surveys about cheating are one of the well-established research focal points. Watson and Watson (2011), in a survey of 635 undergraduate and graduate students, report that students admitted to higher rates of cheating in face-to-face courses than in online classes. Meanwhile King, Guyette, and Piotrowski (2009) survey 121 undergraduate business students and find that almost 75% of the students in the sample thought it is easier to cheat in an online course. Using student surveys as well, Charlesworth, Charlesworth, and Vicia (2006) find that cheating is no more likely to take place in online courses, while Kennedy, Nowak, Raghuraman, Thomas, and Davis (2000) report that cheating in online courses is more likely. The evidence from student surveys on online cheating appears to be mixed.

Interestingly there are very few empirical studies that actually model whether cheating occurs more frequently in online courses. Harmon and Lambrinos (2008), using principles of economics courses taught online, develop a model to predict exam scores using student characteristics when some final exams in online courses are proctored and others are not. They find the explanatory power of the student variables such as student GPA at the beginning of the semester is lowered when the final exam is not proctored.

The other large segment of literature about online instruction assumes that online cheating is a problem and addresses what can be done to fix it. Rowe (2004) and Olt (2002) offer various strategies for helping to minimize academic dishonesty in online courses. Cluskey, Ehlen, and Raiborn (2011) outline some of the techniques that we discuss for high-stakes assessment and recommend that online instructors use very small testing windows. Ultimately, the conclusion of many of these types of studies is that the only definitive way to curb cheating is to have proctored exams of some fashion. Interestingly, Dunn, Meine, and McCarley (2010) discuss the development and use of The Remote Proctor as one solution to the proctoring issue. The Remote Proctor is a camera and microphone system for monitoring events in the testing environment. Our paper adds to this growing body of the literature on online course integrity.

CHEATING RISKS IN HIGH-STAKES ASSESSMENTS

In quantitative fields such as finance and accounting, it is common to rely on high-stakes assessments of skills at some basic level; naturally, faculty want to carry this over to online or hybrid delivery. More importantly, if a program or course is simultaneously administered online as well as face-to-face, it is absolutely necessary (and usually required by accrediting bodies) that the courses mirror one another as closely as possible in order to avoid arbitrage between the online and traditional credit hours. Translating traditional testing methods to an online or hybrid environment can be extremely challenging as there is an entirely new set of behaviors to control for, along with the familiar ones.

In a traditional classroom we must control for different types of cheating behavior when the exam is administered—students using “crib” notes, copying from their neighbor, taking copies or photos of the exam out of the classroom, or students working together in other ways. We attempt to keep our exam questions and methods out of circulation in a variety of ways. In an online environment, there are a variety of ways that students will try to cheat, some involving collaboration and some not. If the overwhelming majority of “online students” also attend regular classes each week at the university and know each other from their other classes, then they will have the opportunity to work together on exams and other assignments that might not exist in a program consisting of truly online or distance education students.

Designing high-stakes assessment for online instruction involves a new set of decisions that faculty may have never considered before. For example, if a faculty member teaches two sections of a traditional class on different day schedules (or on the same day with a 2- or 3-hour break in between), then we may encounter students from the first section informing students from the second section of the test material. This type of “leakage” requires that we develop separate versions of the same exam for the different tested sections, and it becomes more and more difficult to be fair to each section as we develop more and more versions of the assessment. In an online or hybrid environment, or in the case where all modalities are taught simultaneously, the faculty member will need to consider that there may be “leakage” across or between all sections. For online testing, the faculty member must also decide the calendar timing

of the test (will it be on weekends, late at night) and the length of the window that students will have in which to take the exam, as well as the amount of time for each question. They must also decide whether or not to allow students to “backtrack” when taking the test. Each of these parameters can determine how and why students attempt to cheat on their exams.

Cheating Risks in Testing

Some cheating is done on an individual basis, and some is done because students can work together. The online environment, by its nature, may make it more difficult to prevent or catch students who are involved in working together when they are not supposed to be. These problems will likely be more evident when the online courses are taken by students who are part of a traditional campus student body because they will have fewer costs to working together. We have observed several behaviors to plan for and work against in any instance.

Recording, saving, or purchasing test material. This is, in part, the high-tech version of the tests databases that have been maintained by social organizations at larger universities for several generations. In this version, though, students can use software such as Google Docs to search test items more quickly (Young, 2012). They have unprecedented access to instructor test banks through the Web, and they can search through them easily or maintain their own unique test banks semester after semester, or even put them together quickly on the fly and access them through mobile devices. When an online class gives instant feedback on a test item, for example, the question and the answer can be saved and distributed easily from then on. If these questions are also being used in traditional classrooms, then online testing can dilute the value of face-to-face examinations in following semesters as well.

Taking the test together. Some students will try to work together in real time during their online tests, either in the same location or at their separate locations using the Internet or phones for communication. We have encountered students who set up “LAN parties” to take tests at one student’s home simultaneously even when we have shortened the test windows and exams to discourage this type of behavior. Students have also tried to get ahead this way by coming to campus and working together at computers in the library or in computer labs. One “ring” was broken up taking tests from our university in a computer lab at a local community college, and they had been doing it for months.

A related version of this is when one student gets an excused absence from the exam in order to take it later once they have been briefed by classmates. This also occurs in face-to-face instruction, but it seems less likely for students who have to maintain a weekly presence and perhaps have to explain themselves face-to-face.

Ordered pairs. If the testing window is large enough that one student can finish the exam in time to help others, then some students will try to work in pairs or even triplets. In this situation, one student will take the test first, this time, and record their answers, and the next will take it first for the next exam, and they will rotate like this in order to give the subsequent students each time extra knowledge of the exam material.

A recent *Chronicle of Higher Education* article illustrates how students can use some combination of these techniques to bypass the learning process altogether (Young, 2012). In that instance, a student admitted that he and several other classmates took turns, maintained their own Google Docs file of the randomized questions (complete with certified answers) and worked simultaneously to avoid studying or learning in an online course. The student blamed the university for not trying to stop or catch cheating, saying, “If they didn’t think students would do this, then they didn’t think it through” (Young, 2012).

Using the Internet during exams. We have caught students, both graduate and undergraduate, who tried (unsuccessfully) to search for essay answers on the Internet during their tests. This costs little in the way of social investment or exposure risk, but it requires professors who have left a great deal of time for each question, as well as professors who were not diligent enough to look for obvious plagiarism (or, in at least one case, embedded links and fonts pasted into Blackboard) when grading. These attempts are sometimes easy to catch, but prevention would be much more efficient.

Outsourcing. There always exists the chance that students have simply hired someone else to take their exams or write their papers for them. Another recent article from *The Chronicle of Higher Education* discusses the types of arrangements that can be made in order to receive assistance in online classes (Dante, 2010). In this article, an indi-



vidual describes his or her career as a professional online student for hire, the Shadow Scholar:

I've written toward a master's degree in cognitive psychology, a Ph.D. in sociology, and a handful of post-graduate credits in international diplomacy. I've worked on bachelor's degrees in hospitality, business administration, and accounting. I've written for courses in history, cinema, labor relations, pharmacology, theology, sports management, maritime security, airline services, sustainability, municipal budgeting, marketing, philosophy, ethics, Eastern religion, postmodern architecture, anthropology, literature, and public administration. I've attended three dozen online universities. I've completed 12 graduate theses of 50 pages or more. All for someone else. (Dante, 2010)

As faculty, we have very few ways to determine whether the students who are supposed to be taking our online exams are actually the ones taking them. Unfortunately, the perception of academic integrity and the reputation of the university are most often attributed to (or blamed on) the faculty who teach there. Students and other external constituencies expect faculty alone to protect academic integrity, and to the extent we neglect this role we are in some ways enabling dishonest behavior and harming the students who choose to remain honest. It is understandable, yet still unfortunate, that defensive cheating appears to be on the rise, at least in our experience.

Remedies

Many online cheating behaviors will have a face-to-face analog, but it seems that many educators initially take for granted the level of consistency and integrity that regular face-to-face meetings and examinations provide. For example, it stands out easily when an unfamiliar student shows up to the final examination in a traditional course. With online classes, the problem becomes much more difficult to deal with: how do we know who is on the other side of the computer connection?

Additionally, the question of examination or assessment integrity is not simply one of changing assessment strategies in a class or course. During our development phase, there was a loud chorus from both peers and developers who decried high-stakes assessment and told us that it was simply "out of date" and suggested that we should just embrace that fact and move ahead to a different teaching model as we went to an online modality. While we have refused to change our teaching to that extent, we have recognized that online tests change our understanding and preparation of assessment nonetheless, both in our traditional and our online courses.

For one thing, student prowess with cheating in both modes will evolve over time, and our techniques must adapt as well. As their opportunities change, we must change with them. Unfortunately, the development model used by instructional technology professionals for online courses (like the tendency of software developers in general) may be partial to "locking in" content and establishing courses that change little during the academic year; this model works against good pedagogy and also stands in the way of most of the preventive recommendations we have outlined below. Static content and assessment is one of the most common factors in student cheating, online or otherwise. Inflexible testing methods and projects that never change from one year to another invite students to find and exploit weaknesses. The burden of reputation and pedagogy falls on faculty. We are ultimately responsible, again, to the university and the community as a whole for these behaviors and outcomes, whether we like it or not. If we choose to remain silent about ineffective university policies and practices, then we will also be the ones expected to revitalize the lost reputation of our programs. The same is true if we allow marketing or enrollment issues to take precedence over the quality and content of instruction, online or otherwise.

It must be said here, again, that prevention and awareness are the two most important goals of any effort to deal with academic integrity issues. We provide some suggestions based on what has worked in our programs, but no one method will work to control or prevent all behaviors. Newly-online faculty may find themselves becoming familiar with some of the behaviors we mentioned above, and we have listed here some basic techniques that may help.

Proctoring. The obvious solution to prevention is absolute control of the testing environment. It has the additional advantage of being something we are all familiar with already. Many "online" programs require students to find a local testing center or proctor and then provide the exams for those proctors on an individual basis. Some schools require students to come to campus to take important assessments, including comprehensive examinations, at the end of their programs. Other universities allow students to take online tests using a computer at a controlled testing center

near the student's physical location.

The most recent solution is to actually allow students to use their own computer, in their preferred location, but to monitor them using a camera and microphone. Vendors provide either real time or recorded proctoring in this manner for a fee and report back to the faculty members if any incidents are controlled. These vendors typically make use of software to control the access of the student's computer during the exam (what is known as a "lockdown" browser option, mentioned next). In addition, they verify the identity of the test taker, using external databases such as those maintained by Equifax and other credit monitoring agencies.

Unfortunately, some universities have chosen to actively work against faculty who need to proctor. Some programs have refused to support proctoring activities for a variety of reasons, including expense, student opinion, and/or enrollment impact. Although Cruskey, et al. (2011) provides a laundry list of techniques to help faculty maintain academic integrity without proctoring, their ultimate recommendation is that proctoring is likely the only way to maintain absolute security in online programs. The efficacy of traditional proctoring versus remote proctoring remains to be seen, and each method of proctoring certainly has its own costs and benefits.

For spring 2013, our School of Business began a pilot study with one of the more popular proctor vendors, ProctorU.com. It has been easy to implement, although the university has yet to pass the dollar cost on to students (which would be very simple to do on a class by class basis). Interestingly, in one set of classes, students were given the choice of taking their comprehensive final examination with a Web proctor or in a special face-to-face session on campus, and the overwhelming majority of our "online" majors chose to come to campus on a Saturday to take the tests. We anticipate additional pilot studies with at least two additional vendors over the next several semesters in an effort to understand the costs and benefits of this technique for reducing the incidence of cheating on exams.

Software control of the environment. Products are available that will limit a student's access to material outside of the examination during the examination. One of the best known is the Respondus Lockdown Browser application, which keeps students from opening other documents or surfing the Internet during the test. In order to work properly, these products must be compatible with the learning management system (such as Blackboard) that the university is using for distance courses, and therefore the university computing personnel must be amenable to implementing such solutions. With an application of this type in place, exams can be administered without the fear that additional resources will be available to dishonest students and not available to those who are trying to do things honestly.

Algorithmic test banks. For those subjects that rely on math- or problem-oriented questions, faculty can program most learning management systems with questions that change at each implementation. This has recently been incorporated into products from textbook publishers as well. McGraw-Hill's Connect software, for example, is integrated into a university's learning management system. Unfortunately, these questions can still be copied by students and added to databases unless students are restricted from doing so by one of the other methods discussed here.

Deep test banks. Test banks for every major textbook are readily available over the Internet, but if faculty choose to develop their own test banks it is best to make them very deep and very broad. It must be recognized, too, that, as in our Google Docs example, it is likely that most or all of the faculty member's intellectual effort will be widely available on the Internet soon after it is used in class. Of course, then the burden for students becomes searching for the questions that they seek the answers to, and in an age of text files and Control-F, this search becomes less and less costly.

We have had some success with tweaking publishers' test banks on a question by question basis, specifically by changing questions slightly and also changing the company names used in the problems. This also allows us to more accurately reflect the way we cover certain material in class or shape the questions to match our preferred conventions and terminologies. Changing individual questions in this manner is much simpler for the professor, and probably more fair to the honest student, but as with other techniques, this is one that must be done on a regular basis.

Actual test parameters. Different learning management systems have different settings that can be used to control behavior during exams. In particular, it is important to scramble question order and answer order (for objective questions) during the tests. In addition, the exam software should only show one question at a time (to make it harder to obtain the questions in general for those who are copying them). It is also important to prevent students from scrolling through the entire test at one time, which is known as "backtracking." Preventing backtracking requires a student



to save each answer before moving on, and students who work together will not be able to align their questions during an exam. Additionally, this prohibits students from copying each test question, then claiming that they were forced out of the exam to obtain a retest of the same material (which if the instructor is conscientious then forces the faculty member to write a new exam for each student if the questions on the original exams are the same or related for every student). Finally, it is important to record each student's IP address during the test in order to document their physical location to some extent and also to remind students that the instructor will be recording that information. IP address information, while in no way definitive by itself, has been very useful in catching students who are trying to work together because it can establish that they may have been in the same vicinity during the testing window.

The instructor must put a great deal of thought into deciding how much time to allow for each question (which sets the testing window), how much time to allow for the examination to be available to students (the testing period), and when to schedule the test (night, weekend, etc.). It is important that students not have time to dig through their book, the notes, or the Internet if those are the restrictions of the exam. In our experience more than a few students come to an Internet course with the expectation that they should be allowed to use any resource during the test, and they are unprepared to learn the material beforehand as a result. For example, open-book exams, as we all know, should be different from and usually harder than close-book tests, for various reasons. This is no different for online courses, and it illustrates the type of tradeoffs that exist in designing assessments for any modality.

Most importantly among all of these considerations, though, absent proctoring, is the idea that all students should be taking the examination at the same time, within a narrow window. To do otherwise is to encourage cheating, even when other measures have been taken. To give undergraduates a day or even longer in some cases to take an exam, regardless of the length of the actual test period, is to encourage collaboration, in our experience.

We do not release traditional feedback in the learning management system (nor do we allow our face-to-face students to keep exams outside of class). Within our learning management system, releasing anything other than the basic score for a question releases the entire question and the answer choices itself. Instead of using that method and releasing the exact questions every semester, we have developed a system of releasing comments that provide the topic of each question and a statement or two about why the answer was deficient. This works best for short-answer and essay questions, but it is useful for algorithmic problems as well. Of course, if students want more detailed feedback on an individual basis, we will provide it either by giving them additional information about specific questions or by meeting with them, if that is viable. We never, however, release the exact questions or answers to students because that simply compromises the material from one semester to the next.

As might be imagined, many of these techniques will be unpopular with any students who expect to do whatever they would like to do without restraint on exams and other assignments. A good guideline or starting place for making these decisions is the structure used for testing in the face-to-face sections of a course. For example, if the face-to-face section gets a mix of short-answer questions, problems, and objective questions in a 3-hour period three times per semester, that's where the online course could start. Of course, short-answer and essay questions have both advantages and disadvantages in an online environment, and the chief disadvantage is the sheer amount of time it takes to grade effectively and give constructive feedback without giving out the exact questions every term.

Short-answer, essay or other open-form tests. For those of us who have used this type of exam format for many years, it may seem to be an easy transition to simply continue using these in online courses. We are already accustomed to the time needed to compose and grade such assessments in a face-to-face context. However, there is a greater risk that these questions will be collected over time from unmonitored online tests, and if instructors give back complete test keys, it is likely that they will make their way into student answers in future exams, verbatim. More importantly, the larger risks for this type of exam in an uncontrolled test session are outright Internet insertions and plagiarism. In just the first few years of our online programs, we routinely caught students copying answers from the Internet (even though the answers were not correct) and also using an open document to copy out of their notes into the exam.

One way to mitigate the damage from this type of behavior and actually turn it into a positive factor is to provide students with extensive exam reviews that outline each important question, problem, or topic in the class well before exam dates. If better students have worked through these questions, they will be better prepared, and it gives little

advantage to the students who have only taken the time to copy the questions from the old exams. In addition, as we cover information each semester we will emphasize different aspects of many of the questions in our lectures and podcasts, and this helps distinguish those students who might be using older answers they have obtained from others. Those students who choose to emphasize the wrong aspect of a particular essay answer will likely earn few points on those questions. As with all things, students will decrease their behavior if the costs increase or if the benefits decrease, and we have found that short-answer or essay questions based on questions from extensive exam reviews are a singularly effective way to both increase the costs and decrease the benefits of cheating behaviors.

PLAGIARISM AND REMEDIES

Unfortunately, plagiarism has become a more common concern in the age of the Internet, and not just for online courses. Overwhelmingly, the best remedy for plagiarism is to show students that it is never necessary. If we show them that they can write well, and think well, and that they can do their own work, they won't need to plagiarize. If we give them difficult assignments to challenge them and build their confidence, then they are much less likely to need to copy from others. Confidence and ability trump cheating every time. Of course, it also helps to minimize the opportunities for students to be tempted because they may not understand the karmic consequences of cheating: cheating undermines one's self-esteem and changes one's self-image in addition to all of its other byproducts.

Consistency

After prevention, the most important consideration for dealing with suspected plagiarism is to be consistent when dealing with it. Consistency within a program (in our case, among finance classes within the School of Business) is very important—it helps students recognize the gravity of the issue, as well. For new faculty members, the university catalog should have a description of the school's policy on academic dishonesty and the process used to deal with suspected violations. Every faculty member should be familiar with this process, to the point of even volunteering to sit on hearing panels, if possible, to be able to understand what happens. Additionally, each instructor should prosecute every instance of cheating that he or she observes, and they should encourage and help colleagues do the same. Prosecuting requires a great deal of documentation, and it is not always going to be successful (at punishing the student). From a larger perspective, though, a consistent focus on academic integrity in this manner will eventually convince a program's students that their professors and the university take this stuff seriously. That alone is worth all of the cost and preparation because students' awareness will go a long way toward preventing plagiarism and cheating behaviors in general.

Resources

There are several software programs on the market that can help faculty identify plagiarized passages in student writing, but often they won't be necessary. When looking at answers in an online exam, for example, and it appears that the student's answers are mechanical and based on a few keywords in the question, it is often a simple task to insert part of the given answer into Google to find the Internet source very quickly. However, the programs developed for this purpose are very useful for another reason: they allow faculty to maintain databases of old student papers for comparison. This feature alone is extremely useful in catching multiple submissions, and we have (unfortunately) had several instances of this with our students in the past few years.

The Blackboard Learn learning management system incorporates SafeAssign. This allows students to submit their written assignments directly into the SafeAssign system to have them both compared with the existing database and also evaluated against other documents on the Internet. SafeAssign produces a report which can be optionally shared with the student that not only shows similar sources on the Web but also scores each passage that might be a violation within the student's document. It then produces an overall index number that reflects the originality of the document. SafeAssign's index number is not particularly useful by itself, but the SafeAssign report can be a starting place for the faculty member in the investigation. In addition, the SafeAssign report can be used to show students how their writing compares to their sources, and the report can be very useful in academic honesty hearings should all of our preventive measures fail. When confronted with a SafeAssign report, students can no longer live in a state of denial—having SafeAssign's nearly objective evaluation of a student document has substantially changed the confrontational aspect of meetings with students about suspected plagiarism. Of course, there are still marginal cases, or



cases that require a great deal of judgment and analysis on the professor's part, but it is much nicer to be able to work with students on those cases and avoid wasting time arguing with other students about whether or not they copied something directly from one of last year's student papers without proper attribution.

We have assembled the following list of tips and techniques that should help newly-online faculty deal more effectively with the risk of plagiarism.

Discuss plagiarism consistently and persistently within the course:

- In the syllabus, make students aware of what constitutes plagiarism and how you handle it (as well as the penalties for it). Be explicit.
- Especially in online sections, have a "syllabus quiz" explaining the course policies, and explaining your definition of plagiarism. Require students to earn 100% on this quiz before any other course material will be unlocked for them. Give students a hard deadline to do this so they won't wait too long to study.
- Discuss in class the university process for dealing with academic dishonesty and plagiarism.
- Explain the SafeAssign tool in BlackBoard in your writing assignment outlines.
- Point students to library and Internet resources on plagiarism. Have these in your materials and assignment handouts.
- Point students to your university's Writing Center. Have the Writing Center speak to your class.
- Talk about copyright and the Internet. Talk about how to document information from the Internet, and the value of different sources (legitimate news agencies vs. bloggers or Wikipedia).
- Make sure students know that you actually read the papers that are handed in. Give as much feedback as humanly possible.
- Use a plagiarism screening software as much as possible. SafeAssign (within Blackboard) allows faculty to keep a running database of old papers.
- Make sure that they know you will send their paper to SafeAssign, and that you will add their paper to your ever-expanding database of those that get checked against every semester.
- Allow students to self-submit a draft into SafeAssign early in the semester and actually see a report, with or without you getting a copy. In this way they can see where they have been too casual about citations.

Focus on the structure and process of professional (technical) writing:

- Be prepared to hear "But this isn't a writing class!" and be ready to respond.
- Give a list of allowed topics for students to choose from, and rotate it often, eliminating those topics that have been "overdone."
- Do not let students get into a time crunch, which drives panic cheating.
- Ask students to keep a writing journal (or a blog) throughout the semester that they update and submit for review periodically. It will help them learn to document sources better and provide a window to their process. This (and scaffolding, see below) are also good defenses for students if they need to defend themselves or their work at any point.
- Have conferences with students regarding their progress and to see what they have written or journaled about thus far.
- Be familiar with a student's style of writing, grammar, and vocabulary. This makes it easier to determine if they are the actual writer of the paper.

Use “scaffolding” or have students turn in any or all of the following over the course of a semester:

- A thesis statement/abstract
- A written proposal for the paper
- Outlines (as they progress)
- A working or annotated bibliography and/or literature review
- Rough drafts or working notes. Drafts should be cited properly, too.
- All working drafts turned in with the final paper
- Copies of cited references. (Some online “paper mills” will send these for an extra fee.)

Tie the topics and assignments to the class experience:

- Use writing assignments that have students analyze classroom activities or discussions in light of the text.
- Ask students to summarize their findings in class on the day they turn it in, or ask for one unusual thing that they learned about their topic or field.
- Ask test questions for each student tailored to their specific writing topics.
- Use local issues as topics.
- Ask students to include a section in their term paper that discusses their topic in light of what was covered in class.
- On the final exam, ask students to summarize the main points of their research paper.
- As part of the paper or as a separate assignment, have students reflect personally (in writing or in class) on the topic they are writing about or on the process of doing research and writing.
- Require a short paper on academic dishonesty and plagiarism (which is also very useful in academic honesty hearings).

FINAL CONSIDERATIONS

Some faculty members when confronted with the risk of cheating behavior and plagiarism choose to ignore the situation or leave the problem for someone else. The decision to offer online courses (in conjunction with face-to-face alternatives) merely represents another opportunity to dialog about these important issues. We have seen programs go through the understanding and recognition process with respect to both face-to-face as well as online programs, and we have colleagues at other institutions who have had to embrace different ways of dealing with these issues at various points in their careers.

One solution, as mentioned above, is to do as some of our colleagues suggested and simply avoid high-stakes assessment altogether. Faculty can simply adopt a completely new and innovative system for assessment in classes that is unrelated to the years and years of success and experience with high-stakes testing. If choosing this option, though, it will be important to change all of the other classes in the major, too, because students will slowly become unaccustomed to the stress of high-stakes assessment. If you are in a discipline with external accreditation by exam (such as public accounting or financial analysis), it will be difficult for students to assimilate that method of assessment after graduation.

Another solution is to do nothing and assume that the bad karma associated with cheating will lead to terrible things happening to the student later in life, such as being hit by a bus. This is known, therefore, as the “Bus Method.” We have had numerous colleagues who harbored this belief over the years, but we have yet seen this result come about for any of the students that we knew it should apply to.

Yet another solution is to do nothing and assume that “the market will straighten it out” once our students have graduated. Unfortunately, the market tends to straighten out uncertainty about program quality by not hiring any of



our graduates. This is called a “lemons problem,” and the basic idea won a Nobel Prize a few years ago (Akerlof, 1970). Another solution, one that seems to be popular with our professional colleagues in student services administration, says we should do nothing and assume that “cultural differences” or student status as a Millennial, international, first-generation, or non-traditional student (or perhaps all four) is to blame for academic dishonesty behavior. Unfortunately, most of those things are outside of our control as mere university faculty, and it will likely be more efficacious to try to change behaviors prior to graduation instead.

Dealing with the risks of plagiarism and cheating in online courses is more challenging than in face-to-face courses, but we have tried to show that online programs have both opportunities and challenges. Faculty and administrators have to be proactive in thinking about course and program design, as well as simply deciding what compromises to make when migrating existing pedagogy and assessment schemes. As we have found, a great deal of information has to be available to students in order to give them the resources they need to succeed in an online environment, and they have to be made aware of why academic integrity issues are important. Taking steps to prevent academic dishonesty can be costly, but refusing to prepare for it can also be costly in many ways.

In conclusion, we offer a few final suggestions based on what we have discussed above:

- Give students enough resources (reviews, etc.) that they are not tempted to cheat.
- Explain to students often that they do not need to cheat or plagiarize to do well in your class.
- Give them enough difficulty in assignments to build confidence in their abilities throughout the semester.
- Prosecute each and every instance of academic dishonesty and encourage your peers to do the same.
- Discuss penalties and the university process in the syllabus and the test instructions. Make sure students understand that cheating will be prosecuted.
- Give students explicit incentives to report cheating by others as required by the student code of conduct at most universities.
- Have a very explicit statement in your syllabus that clearly articulates the penalty for cheating or plagiarism in your class. For example, “Academic dishonesty of any kind in this class will result in an “F” for the course.” This one is very useful in academic honesty hearings.
- Have students complete individual honor pledges for the class and/or each assignment.

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