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Promoting Academic Integrity in Online Education

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PROMOTING ACADEMIC INTEGRITY IN ONLINE EDUCATION

Ask most people who don't teach online about the likelihood of academic dishonesty in an online class and you will likely hear concerns about the many ways that students could misrepresent themselves online. In fact, this concern about student representation is so prevalent it made its way into the Higher Education Opportunities Act (HEOA).

Passed into law in 2008, the act brought a few big changes to online education, including a new requirement to "ensure that the student enrolled in an online class is the student doing the coursework."

Although there's some disagreement as to whether distance education is more susceptible to academic dishonesty than other forms of instruction, what isn't up for debate is the fact that for as long as there's been exams, there's been cheating on exams. The online environment simply opens up a different set of challenges that aren't typically seen in traditional face-to-face courses.

Promoting Academic Integrity in Online Education was developed to help you understand the latest tools and techniques for mitigating cheating and other unethical behaviors in your online courses. The report features nine articles from *Distance Education Report*, including:

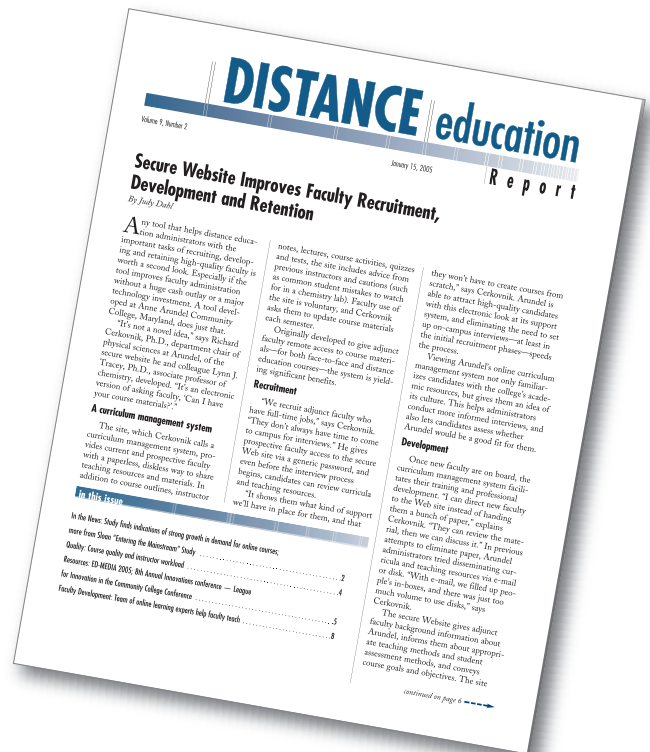
- Combating Online Dishonesty with Communities of Integrity
- 91 Ways to Maintain Academic Integrity in Online Courses
- The New News about Cheating for Distance Educators
- A Problem of Core Values: Academic Integrity in Distance Learning
- Practical Tips for Preventing Cheating on Online Exams

Online education didn't invent cheating, but it does present unique challenges. This report provides proactive ways for meeting these challenges head on.

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Combating Online Dishonesty with Communities of Integrity

By Jennifer Patterson Lorenzetti

Ask most people who do not teach online about the likelihood of academic dishonesty in an online class, and you will likely hear concerns about many ways that students can misrepresent themselves online. In fact, this concern about student representation is so prevalent it has made its way into law and policy discussions.

Lori McNabb, assistant director of student and faculty services for the University of Texas System TeleCampus in Austin, points to the proposed 2006 Higher Education Opportunity Act (Boehner, 2006) as a piece of legislation that narrows in on a single facet of academic dishonesty. The act includes a requirement that institutions offering distance education have safeguards that ensure that students who register for online classes are the same ones who do the work and receive the academic credit. Clearly, there is a large concern that online education is particularly susceptible to student misrepresentation, through actions like asking another student to complete coursework or assessments.

For McNabb, this narrows the discussion in ways that do not completely define the problem of academic dishonesty and which unfairly paint distance education as more susceptible to academic dishonesty than other forms of instruction.

According to McNabb's research, this is not the case.

Understanding academic dishonesty

"People always ask me about cheating, but those who teach online aren't talking about it [more than traditional educators]," McNabb explains. It may well be that those who are not in either the traditional or online classroom do not understand the breadth of types of academic dishonesty in which students might engage.

In a recent *Journal of Online Learning and Teaching* paper, McNabb cites work by Gallant that divides academic dishonesty into five categories: plagiarism (using another's work without citation), fabrication (making up information), falsification (inaccurately portraying information), misrepresentation (falsely representing oneself), and misbe-

havior (behaving in ways counter to expectations). In a schema like the Boehner legislation, only misrepresentation is seen as an issue for online education.

However, in her background research, McNabb identified evidence of problems of academic honesty that are found across education delivery types. For example, students may not realize that paraphrasing without citation is plagiarism, and many think that taking information from the internet in a "cut and paste" fashion is acceptable. In fact, by 2005, some 41 percent of students admitted to participating in this practice. Research also indicates that some students are not clear about unpermitted collaborations constituting academic dishonesty.

None of these examples of academic dishonesty is unique to online education or more prevalent in a distance learning class. According to studies that McNabb has conducted, experienced online educators realize this.

Faculty perceptions

McNabb conducted research at UT designed to learn more about faculty beliefs about academic honesty among their students. Most significantly, the faculty did not perceive a significant difference between academic honesty in online and traditional courses. "Faculty members don't believe the [online] medium is less secure than the classroom; some believe it is more secure," says McNabb. Her findings show that about one half of faculty members believe the two delivery methods are equivalent, which others feel one is superior to another. Put another way, McNabb explains that "65 percent believe online is equal to or better than [traditional]; 75 percent say the classroom is equal to or better than [online]."

These findings are consistent across a variety of questions asked. In the study, McNabb found that, in regard to undergraduate students, 57 percent of faculty believed that there was no difference in likelihood that students would engage in academic dishonesty according to delivery method. Some 49 percent felt that academic dishonesty was equally easy to identify in either delivery method, and 52 percent said academic dishonesty was equally easy to prevent. Additionally, 50 percent said it was equally easy to develop a community of integrity.

The three-pronged approach

McNabb identifies three ways that universities can address academic dishonesty:

- **Policing:** This includes efforts to identify academic dishonesty and punish those who engage in this behavior.
- **Prevention:** This includes efforts to create barriers. Online courses have many prevention tools at their disposal, including test design that might include timed

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completion of the assessment and limited numbers of log-ins during the exam, and proctoring (either in-person or electronic). This approach also includes education campaigns. As the research has shown that many students do not identify “cut and paste” as plagiarism and may not understand that unapproved collaboration is academic dishonesty, educating students about what constitutes unacceptable behavior may prevent it among at least a certain segment of students.

- **Ethical:** McNabb calls this the “most difficult approach,” as it strives to encourage students to want to do their own work. In this approach, there are several ways online education can foster a community of inquiry that fosters ethical behavior.

Some approaches to fostering a community of inquiry online as identified by McNabb are:

- Include critical thinking discussions in online classes.
- Incorporate assignments that anticipate and require collaboration.
- Choose learning activities that are “distinctive, individual, and non-duplicative.”
- Develop an honor code for the class.
- Explain what will be considered unacceptable academic behavior in the class by the instructor and by the university.
- Ask for student input on creating a community of integrity.

None of these ideas, nor the others that McNabb identifies in her paper, are bound to a delivery medium. Yet those who have not taught online – faculty, administrators, and legislators – sometimes find it difficult to imagine how such community creation can happen when the parties involved cannot see each other.

This is a mystery that those who teach online are not troubled by. “There is a disconnect throughout the industry. [Some don’t] understand how intimate online can be,” says McNabb. One small example is the intimacy of discussion boards, which often allow participants to share their ideas in a safe forum regardless of time and distance constraint. They may also contribute to the formation of a positive relationship between instructor and student, and research shows that students who believe they have this sort of relationship are less likely to engage in academic dishonesty.

Reprinted from Distance Education Report, September 1, 2009. ★

The New News about Cheating for Distance Educators

By Scott L. Howell, PhD, Don Sorensen, and Holly Rose Tippets

While many distance educators know they need to protect the integrity of their programs and prevent cheating whenever possible, few, if any, want to spend the necessary time or resources required to prevent and detect cheating. Confronting cheaters and spending resources on deterrents, detection, and discipline is not why distance educators go to work each day.

However, this responsibility to stay current on old and new ways of cheating is receiving more attention at professional conferences as accreditation and legislative bodies codify expectations for distance education. For the past 10 years regional accrediting bodies have required programs to “ensure the integrity of student work,” and in 2008 Congress reauthorized the Higher Education Act with this provision: “an institution that offers distance education needs to have processes through which the institution establishes that the student who registers in a distance education course or program is the same student who participates in and completes the program and receives the academic credit.”

Meet the braindump

To truly understand the cheating industry today—because an industry is what it is—it is necessary to know the term “braindump.” A “braindump” is a full-fledged business, typically managed online, that provides students with studying services. They often guarantee candidates passing scores. Many of the well-known study web sites, such as Cramster and Course Hero, are developed to help students study. However, there is a debate over whether or not these sites, or aspects of them, enable cheating. Questions arise over students’ access to previous tests and questions, homework solutions to textbooks assignments, step-by-step solutions, and graded essays. Subscription to these braindump sites is increasing and, simultaneously, so is concern by test developers over copyright infringements.

How students are cheating

The newest methods of cheating utilize technologies but the old ways are still commonplace and widely popular. The most common method of cheating in these news articles was the use of “braindumps.”

Here some others of the most popular current cheating methods:

- 1. Mobile phones and iPods.** Students record answers and crib notes on their phones, text each other answers to questions with their phones, and then take photographs of exams and transmit them to others using their phones. One country even banned students wearing mobile phone wristwatches from examination centers because of an earlier cheating incident. Two recent studies about the increasing use of cell phones to cheat: one study said, respectively, that either one third of teens or 52 percent of teens use cell phones to cheat in one way or another.
- 2. Braindumps.** One writer may have said it best: “Braindumps come in many styles, all of which are variations on the questions and answers that have been stolen from the actual exams. When we started warning people about braindumps, they were merely questions and answers or Q&A with explanations. They have since evolved into a much more complex and almost convincing form that many individuals would find hard to believe are braindumps.” One article reported that a professor from Indiana State University learned that her test questions were for sale on e-Bay.
- 3. Organized cheating.** Whenever a group of students collaborate to cheat by taking a test for hire or making other illegal arrangements, e.g., bribery, robbery, it may be considered “organized cheating.” A news story from India reported that a “cheating mafia” had infiltrated about 400 schools, controlled proctors, and were able to do a number of other things necessary to “make sure you pass.” Another cheating ring was exposed in Peru involving 13 people who charged students \$1,200 for help cheating on the university entrance exam. A news article in Cambodia revealed that some students bribe their teachers with money for answers to tests; and one in Moscow revealed the same form of bribery (about \$200 to have a grade rigged on a final exam) at the regional university.
- 4. Wireless earpieces and high-tech radio transmitters.** In Great Britain a news source revealed that “Bluetooth technology [is] being used to cheat during British citizenship exams” and that “Test centres have been cautioned about the use of hi-tech equipment

concealed under headphones”; in China a similar technique was used by a “ring [that] involved at least 33 people.”

- 5. Traditional methods.** A recent article reported “the use of notes” as still a common method; sharing copies of a test with colleagues; turning a soda bottle wrapper into a cheat sheet; “long-sleeved shirt method;” and the following: “1. writing on tables before the examination, 2. writing on thighs (female pupils), . . . 3. writing on small sticky white papers. Female pupils hide them in their headscarves, sleeves, . . . they are also hidden in calculators, caps of pens. 4. Writing on hands, fingers or palms. 5. Get shops to type answers on small sheets of paper which are hidden easily. 6. Keeping torn portions from chapters under the answer sheet.”
- 6. How-to cheat sites.** Other recent studies have revealed online sources for students to access that teach them how to cheat. Three stories covered sources for learning how to cheat: one using YouTube; another a social networking site, and the last using Facebook.

How institutions are combating cheating

The U.S. Army has budgeted \$6 million to employ procedures and devices to help mitigate cheating among the country’s soldiers. Is that enough money to prevent cheating, especially when one cheating company alone “grosses an estimated ten million annually”? In some sectors and parts of the world cheating is not only a common practice but also a big business.

Here are some of the interventions used by institutions to mitigate cheating—and not all of them cost millions. While some of the methods employ devices, others use procedures and policies and some use both types. Institutions and policymakers choose from a variety of methods that best fit philosophy and circumstance.

- 1. The “Honor System.”** A high school principal from New Jersey said: “If you have a culture in your school where . . . there is an expectation that students are honest about their academic achievements, where students and the administration promote it, I think you decrease the opportunities for students to cheat.”
- 2. Pledges.** In Texas, testing officials introduced a new approach to mitigate cheating by inviting students to sign pledges that they will not cheat along with other measures including “random monitors and seating charts.” “Experts also say that if teachers hold open discussions, issue warnings, and present guidelines for taking tests and writing papers, kids will be more

hesitant about cheating.”

3. Banning/controlling electronic devices. On the FCAT test in Florida “a new statewide policy requires school administrators to throw out a kid’s exam if an electronic device is ‘within reach.’ While the rules in previous years gave principals and proctors some leeway in their punishment, ‘concerns based on recent security violations’ have forced the state to adopt the zero-tolerance procedure . . .”

4. Photo and/or government identification. Prospective graduate students taking the Graduate Record Examinations (GRE) must show government-issued identification. At some large corporations, “those taking tests will have their photos taken and digitally stored with their test scores in a database, allowing potential employers to match results with the photo. Pearson VUE and Cisco officials declined to reveal more details, but added they will also deploy undercover test takers”

5. Fingerprinting and palm vein scanning. Some of the larger professional admission tests now require fingerprints to validate the identity of test takers. The Medical College Admission Test (MCAT) uses digital fingerprinting and the Law School Admission Test (LSAT) uses more traditional fingerprinting methods. Those who take the Graduate Management Admission Test (GMAT) will be required to “undergo a ‘palm vein’ scan, which takes an infrared picture of the blood coursing through their hands. The image—which resembles a highway interchange in a major city—is unique to every individual. The scans are used widely in Japan among users of automated teller machines but only recently have appeared in the U.S.”

6. Commercial security systems. Some sophisticated systems provided by companies now integrate a number of test security services. Five such systems follow:

- Secureexam Remote Proctor, “is about the size of a large paperweight and plugs into a standard port on a home computer. The pedestal includes a groove for scanning fingerprints, a tiny microphone, and a camera. The sphere reflects a 360-degree view around the test taker, which the camera picks up. Students are recorded during exams, and anything suspicious—such as someone else’s presence or voice in the room—is flagged”
- World Campus, the online arm of the Pennsylvania State University system, is testing another system called WebAssessor. It uses proctors, Web cameras, and software that recognizes students’ typing styles, such as their speed and whether they pause between certain letters. Students purchase the cameras for \$50 to \$80 apiece. They allow proctors to view a student’s face,

keyboard, and workspace.

- The Phoenix-based provider of the system, Kryterion Inc., employs proctors who remotely observe and listen to as many as 50 students at a time. If the keystroke pattern of a student who is taking an exam does not match the one he or she provided at registration, or if the image of a student taking an exam does not match a digital photograph that the student provided at enrollment, then the student cannot start the exam. A proctor can also stop a student who is acting suspiciously from completing an exam. Students must have a broadband connection to use the service.” In China “video cameras will be installed in almost 60,000 test centers around the country to prevent students cheating in the national college entrance examination, . . .”
- “Several other universities are forming partnerships with Acxiom Corporation. The company’s system relies on test takers’ answering detailed, personal “challenge” questions. Acxiom, based in Little Rock, Ark., gathers information from a variety of databases, including criminal files and property records. The company uses the data to ask students questions, such as streets they lived on, house numbers, and previous employers. If students answer the questions correctly, they proceed to the exams;”
- In the corporate world of certification Cisco has now made available to companies who hire their certified engineers a simulation software that retests applicants at the company site to validate further the applicant’s qualifications.

7. Cheat-resistant laptops. “At the University of Central Florida, for instance, business students now take their tests on cheat-resistant computers in a supersecure testing center. UCF students report much less cheating than students at other campuses. ‘We’ve scared the living daylights out of them,’ explains Taylor Ellis, associate dean for undergraduate programs and technology at UCF’s college of business.” A very similar kind of approach is used in Norway where students take tests on laptops that restrict access to just the exam.

8. Lawsuits. In the corporate sector of certification testing, big companies like Microsoft, Cisco, and others are now taking companies who offer “braindump” services and web sites to court. The lawsuits usually involve copyright law and though expensive, have met with success in holding these companies accountable and closing some of them “GMAC, the not-for-profit body that owns the exam,

announced in June that it had won a court order to shut down Scoretop, a website it had accused of improperly featuring questions still being used in the computerized exam.”

9. Computer-adaptive testing and randomized testing.

One of the most sophisticated but promising test security devices, not even necessarily developed with test security in mind, are large-scale exams that are unique to each test taker. The exams are created in real time using statistical models that serve up different questions based on student ability measured on responses to previous questions. “Making the most of the latest advances in performance-based and computerized adaptive testing, and by following strong security procedures, Cisco makes sure that its certification holders have mastered the skills needed in today’s workplace.” Randomization of items on tests is similar to unique items being served up on a computer adaptive exam but different in that no statistical sequence is utilized to select the next item. However, randomized items on a test can easily be delivered, even on a smaller scale, and not cost the institution as much to develop and administer. This method appears to be one that the U.S. Army is considering, according to a news article: “The new measures—including randomized test questions . . . are intended to combat the proliferation of Internet ‘sham school’ sites that help students cheat.”

10. Statistical analysis. Some researchers and companies are beginning to introduce sophisticated statistical and mathematical models that help identify potential cheaters using “computer analysis to compare one candidate’s exam answers with the typical behavior of other candidates’ responses. . . . We now have techniques which can give a strong statistical indication of whether someone has cheated or not.” The company that issues *Cheating in the News* also uses statistical analysis modeling: “Caveon would use the science of item response theory to calculate the probabilities that two people worked together or didn’t take the test independently. . . . Microsoft has said . . . that forensics analysis is so accurate that it will be used as the sole evidence for enforcement actions, including a permanent ban from certification.”

Professor Scott Howell teaches at Brigham Young University.

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A Problem of Core Values: Academic Integrity in Distance Learning

By Jennifer Patterson Lorenzetti

A recent television advertisement for an automobile brand shows a young Scout making a boxy wooden model car while his father looks on. Later, the pair drives to a Scouting race event, where the boy finds that his competition is another boy whose father has handed him a racer clearly made and detailed by adult hands. The car made by our hero ultimately emerges victorious, while the voiceover declares the satisfaction that comes from doing one’s best and perhaps winning in the process.

On the one hand, this commercial is a tribute to parents who encourage their children to put forth a solid effort and make winning a secondary goal. But on a deeper level, it is a commentary on our current culture that everyone who views the ad instantly recognizes the parental insistence on winning at all costs, and that nearly everyone knows a parent who would rather do his child’s work than see him fail.

This is just one example of a culture that allows for academic dishonesty, a problem detailed by Robert Kitahara, assistant professor in the business programs at Troy University. In a recent paper on the subject, Kitahara, the lead author and researcher, and co-author Frederick Westfall, associate professor and regional chair of business programs for Troy University, detail a growing problem in distance learning in which students cheat on tests and assignments, then seek redress for wrongs against them when they are caught.

A connected world

“Everything in the world tends to be connected,” explains Kitahara, who believes that the models presented by the current culture have an impact on academic honesty in both K-12 and higher education. Influenced by the lifestyles and behaviors they see on TV, the current student generation expects to gain reward without sacrifice. “The McDonalds generation expects everything now and they

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don't want to work for it. They want it short and quick," he says.

The problem of academic dishonesty has become one of staggering proportions. According to research Kitahara has surveyed, up to 75 percent of students report engaging in some form of academic dishonesty. And it is clear that academe is not equipped to respond quickly to new threats, as students have proven remarkably able to change tactics. "Part of our problem is, in our effort to make things more portable, we haven't kept up. We need to put in security measures, [but we're] behind the power curve," Westfall says. "It's a losing battle; for everything we dream up, the students will get around it," Kitahara adds.

Troy University is experimenting with tools like the Securexam Remote Proctor, a piece of hardware that connects to a computer's USB port and records the exam as the student completes it. It also allows students to identify themselves by fingerprint at various points in the exam as stipulated by the instructor, so that another student is less likely to be able to step in to complete the exam.

The Remote Proctor may allow for better monitoring of students who are taking exams outside the classroom, but the need for such a device is the result of a cultural shift that has long-ranging implications. "I grew up in the Stone Age, and you didn't have to tell me what cheating was," quips Kitahara. Indeed, one of the reactions to academic dishonesty is to postulate that perhaps the students didn't adequately understand what constitutes plagiarism or cheating, but these types of discussions were frequently unnecessary for earlier generations, who seemed to understand this kind of honesty as part of their upbringing. "It goes back to a person's core values," says Westfall.

Academic dishonesty has implications far beyond just cheating on a test or copying a few lines from Wikipedia. "I don't believe people will behave differently in one context than they do in another," says Kitahara. Therefore, the student who today is cheating on a test may be the employee who tomorrow is fudging the accounting books. How many people involved in the Enron debacle committed academic dishonesty in school? How many loan officers who talked a financially marginal customer into a subprime mortgage in order to make quota were ones who thought copying from an encyclopedia was OK if they didn't get caught? Kitahara notes that more research into these questions needs to be done, but it is likely that academic dishonesty today is dishonesty on the job tomorrow.

The costs of academic dishonesty

One reason that students are able to commit academic dishonesty is that the punishments are far less onerous than the behavior they punish. "The classroom world is fairly low stakes compared to the business world," says Westfall. Kitahara agrees: "The cost/benefit is in favor of the student." After all, it takes a great deal of investment from the university to police student behavior, verify academic dishonesty, and pursue punishment; for the student, the decision usually involves weighing the benefit of quick completion of an assignment with a better grade than could be earned alone against the by-no-means-certain threat of being caught and the likelihood of a slap on the wrist, such as failure of a single assignment or at most a single class.

And, like the young man in the automobile commercial, academics often find that the presence of an interfering parent makes enforcing honesty a difficult battle. "It starts with the little guys; if you do anything to question Little Johnny, you have a parent pounding on the principal's door," says Kitahara. He tells of one episode in which high school students were caught stealing copies of exams. Rather than punish the students, the parents lashed back at the school, claiming that any punishment for cheating would compromise the students' ability to get into elite colleges. "Parents have high expectations, and students are feeling the pressure, but that's not an excuse," says Kitahara.

For Kitahara, all of this points to the need for more stringent consequences to academic dishonesty. "A failing grade in one class isn't going to do. It has to be something that everyone can see, like a permanent notation on the transcript," he says. The notation would be something that would stay with the student, marking an episode of academic dishonesty for future graduate schools and employers to see, and it would remediate part of the problem of lack of student concern about cheating. "Too many students simply don't care; all they have to do [now] is take the course over again," he says.

However, Westfall and Kitahara agree that these measures are "just band aids," as Kitahara puts it. Until students develop an internal sense of right and wrong that governs their behavior, we will continue to need Remote Proctors and ever more creative methods for making academic dishonesty more difficult. "Students have to take personal responsibility," says Westfall.

Reprinted from Distance Education Report, April 1, 2009. ★

Student Authentication: What Are Your Duties Under the HEA Reauthorization?

By Christopher Hill

An Overview from WCET, with Some Suggested Responses from the University of Texas System TeleCampus

The reauthorization of the Higher Education Act of 1965 has been under review by Congress for the past six years. Various controversies have delayed its progress. In the past 18 months, there have been renewed efforts to pass a re-authorization bill, and a bill finally passed the House.

For many distance educators, this was an unexpected development.

The new Higher Education Opportunity Act (HEOA) is now Public Law 110-315. Changes affecting distance education are found in Title I and Title IV, Part H—“Recognition of Accrediting Agencies.” It states that accrediting agencies must require institutions that offer distance education or correspondence education to have processes to establish that the student who registers is the same student who participates in and completes the work and gets the academic credit.

This may mean that distance education programs will have to provide much more elaborate means of student identity verification than they have previously. Negotiated rulemaking for Title IV will take place during the coming year, with an ultimate effective date of July 1, 2010.

In the meantime, distance educators are urged to institute certain general measures. They are expected to have security mechanisms in place, such as ID numbers or other pass code info required to be used each time the student participates in class time or coursework online. They are encouraged to adapt new technologies for student ID verification as it becomes better, cheaper and more mainstream. At the same time these measures must not interfere with student privacy.

What follows is a briefing paper prepared by WCET with some thoughts on general responses that online programs can make to the new legislation.

Are Your Online Students Really the Ones Registered for the Course?

Briefing prepared by: Dr. Rhonda Epper, Co-Executive Director, Learning Technology, Colorado Community College System; Michael Anderson, Assistant Director, Course Development and Technology, University of Texas TeleCampus Lori McNabb, Assistant Director, Student and Faculty Services, University of Texas TeleCampus.

Much attention has been focused on the accountability, student learning outcomes, transfer of credit, and illegal file sharing. The legislation requires “an institution that offers distance education to have processes through which the institution establishes that the student who registers in a distance education course or program is the same student who participates in and completes the program and receives the academic credit.”

The current language casts a broad and loosely defined obligation on distance education programs, raising questions about the perceived “problem” being targeted. Is the provision aimed at stopping unaccredited diploma mills? Would the provision apply to just fully online distance education courses and programs? Does the provision aim to address student cheating and, if so, is it predicated on an assumption that cheating occurs more frequently or more easily in a web-based learning environment than in a large lecture setting?

The online/distance education segment of higher education perhaps has done more to align pedagogy, assessments, and learning objectives than many traditional postsecondary programs. Concerns about the lack of face-to-face faculty-student interactions have forced online and distance education providers to continuously examine their programs and develop sophisticated approaches to ensure the integrity of their academic programs. As a result, the student authentication requirement, as currently proposed by federal lawmakers, would not be overly onerous to the majority of accredited online and distance learning providers. It could, however, depending on the eventual reporting requirements, drive up the cost of these programs if expensive student authentication procedures are mandated.

Some strategies to promote academic integrity in distance education

“Prevention” Approaches to Academic Integrity

- **Use of multiple assessment techniques in place of high stakes exams.** Most distance learning providers use multi-faceted assessment strategies rather than high stakes proctored exams. Assessments are designed to be frequent, varied, and authentic to the application of learning. Instructors rely on interactive discussions, writing assignments, quizzes, capstone projects, group work, and online exams. Assessments are often

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modified from semester to semester.

- **Greater reliance on written assignments and threaded discussion.** Students demonstrate learning outcomes through written assignments and interaction with the instructor via discussions. Instructors become familiar with students' writing styles through online discussions. Many online instructors report that they have greater confidence in the authenticity of their online students' work than their classroom students.
- **Use of test banks, and timed test delivery.** Test questions are randomly drawn from banks of questions, so each student gets a different set of questions. Most tests are designed to be open-book, but once a student begins a test, they have a limited amount of time to complete it, and usually only one attempt.
- **Raising awareness among students about what constitutes appropriate and inappropriate academic behavior in an online course.** Many cases of academic dishonesty arise from students' lack of awareness, such as when it is okay and not okay to collaborate on coursework. Many providers now include in course syllabi a college's academic integrity statement and a link to campus policies; a description of academic dishonesty and information on repercussions for academic dishonesty; links to plagiarism information as well as acceptable sources, and descriptions of permissible and non-permissible collaboration. Some colleges use an honor code approach where communities of learners discuss and agree upon honor codes for courses or programs and the use of ethical decision-making case studies as a part the curriculum.

"Compliance" Approaches to Academic Integrity

- **Plagiarism detection software and browser lock-downs.** Plagiarism detection software can be used for both written assignments and class discussion. Faculty members can simply cut and paste a discussion board post or any written work into the software. This approach is commonly used by instructors in face-to-face courses as well as for online courses. Some instructors use browser lock-down software so the student cannot open additional screens during a test. A weakness to this approach is that the student could have another computer running, but experience has shown that if the student is not familiar with the material, it is very difficult to demonstrate the learning outcomes.
- **Physical proctoring centers for exam delivery.** If a course is designed with a high stakes exam, then physical proctoring may be appropriate and required.

However, most distance learning courses are not designed this way. Physical proctoring in many ways defeats the purpose of distance learning. There are some students for whom getting to a proctoring site would not be practical or even feasible.

- **Remote proctoring devices.** An example of this is found at Troy University where online students are required to purchase a monitoring device that connects to their computer and "watches" them take an exam. It requires periodic finger-print scanning, and turns on a microphone and 360 degree camera if noise or movement thresholds are reached. Students purchase these devices for \$150 through the online bookstore. The use of remote proctor devices is an expensive option for students, especially those taking a single course, as well as for many institutions due to the associated costs of maintaining security for student biometric data. Most importantly, such an approach would place a heavy emphasis on testing which could greatly affect the richness of the learning environment.
- **Other student identity technologies.** Large companies that provide data security for the banking industry have data mining systems that are being used with distance learning students. Students are presented with multiple choice questions about their personal history, such as last street address, name of elementary school, or mother's maiden name. The student must answer the personal question in order to proceed with an assessment, and such questions also may appear randomly during an exam.

But can the student still cheat?

It is important to note that even if an institution carefully implements a combination of the approaches outlined above, a student who is determined to cheat may still succeed in doing so. Little research exists that compares the cheating behaviors of on-campus and online students. There is, however, some research into faculty opinions about the cheating behaviors of online students compared to on-campus students. Faculty members who have experience teaching online see no difference between the two methodologies when it comes to student cheating.

WCET has launched a Working Group on Student Authentication to be led by Dr. Rhonda Epper of the Colorado Community College System.

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91 Ways to Maintain Academic Integrity in Online Courses

Editor's Note: The following list gives practical advice on things online instructors and distance education managers can do to promote a culture of academic integrity in their courses. It is reprinted courtesy of University of Texas TeleCampus. It was compiled by Lori McNabb and Michael Anderson.

Ideas for the Virtue Approach: Develop students who do not want to cheat.

1. Make information on academic integrity very easy to find on your campus website, library website, department website, course, within the syllabus and within assignment specifics
2. Include ethics instruction within the core curriculum and/or area-specific within degree plans
3. Talk about academic integrity at orientation programs and events
4. Provide students with a course or course lesson on research and/or study skills
5. Develop boilerplate language on academic integrity for all courses – for the campus and/or department
6. Assign a department academic integrity liaison to support faculty
7. Write a letter to your students about integrity and post it in your course
8. Link to information about academic integrity on your campus website
9. Require students to read and agree to the campus academic integrity policy
10. Provide students with a writing handbook which includes information on plagiarism and campus policies
11. Ask students to restate the academic integrity policy (this can also be used as a writing sample to use when grading and reviewing student work)
12. Ask students to reflect on the academic integrity policy in the discussion board
13. Include a lesson on academic integrity – especially in introductory courses
14. Include a lesson on avoiding plagiarism
15. Provide opportunities for students to apply their values to decision-making as a part of case studies, current events or historical issue assignments
16. Include an ethical decision-making case study within your course
17. Have a syllabus quiz that includes an academic integrity statement
18. Develop a class honor code at the start of the semester
19. Ask students to reflect on integrity and honor and how it applies to education in the discussion board.

Ideas for the Policing Approach: Catch and punish those who do cheat (may also have a preventive effect).

1. Use Google (unique text string, unique phrase)
2. Use a plagiarism detection service
3. Give “pop quizzes” on readings or assignments
4. Require students to share key learning from references for a paper or self-reflection on an assignment in the discussion board
5. Have students participate in developing a webliography or topic bibliography – use references from assignments students have turned in and require a description, citation, and link (if appropriate). Your campus citation generator may be used for this
6. Ask students follow-up questions such as, “expand upon this statement you made,” “tell me why you chose this phrase, description or reference,” and “expand upon the ideas behind this reference”
7. Select one or two difficult concepts from the paper and ask the student to restate/rewrite the information
8. Be wary of student writing that reads like an encyclopedia, newspaper article or expert in the field
9. Look for whether a paper reflects the assignment, has changes in tense, includes odd sentences within a well-written paper, is based on references older than three years, refers to past events as current, or uses jargon
10. Check references
11. Determine if references are in your library holdings and, if not, ask the student how they accessed the reference
12. Compare student writing on the discussion board with that on assignments and papers; a writing sample collected at the start of the semester can be helpful
13. Compare the writing at the beginning and end of the paper with that in the middle of the paper — language, sentence length and reading level
14. Look for the same author in multiple references
15. Compare the writing in the portion of the paper most closely aligned with the assigned topic to the remainder of the paper
16. Compare quotations with cited sources

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17. Read all papers on the same topic together
18. Keep all old papers filed in the department by topic, for reference
19. Require students caught plagiarizing to complete the assignment satisfactorily and then lower their grade appropriately
20. Report every violation
21. Use a student authentication technology.

Ideas for Prevention: Eliminate or reduce the opportunities to cheat and reduce the pressure to cheat.

1. Be clear about how much collaboration is permissible on each assignment given
2. Develop a learning contract and have students sign it
3. Give each student a different version of a test Change test items and assignment topics each semester
4. Use test timing or force completion (but not both together!)
5. Include application questions on tests
6. Use “smart-people” tests – essays, problem solving, etc.
7. Give open book exams
8. Don’t allow students to get test feedback other than grades until all the students have taken a test
9. Have essay tests on course readings
10. Proctor tests
11. Lock down the student’s browser during testing
12. Require students to turn in copies of reference articles with cited text highlighted
13. Require annotated bibliographies
14. Do not allow last minute changes in assignment topics
15. Require or encourage the use of a writing center (on campus or online) – if required, tell students they may need to turn in their draft with the writing center comments
16. Require specific references be used (this might be the course text)
17. Require an abstract
18. Make assignments cumulative (students turn in parts of a project or paper throughout the semester)
19. Assign specific books or articles for review
20. Require interviews, surveys or experiments as a part of research
21. Have students state and justify their own opinion on a topic
22. Have students write about how they would apply what they learned to their life, work, or current events
23. Have students develop “personal concept” papers

- that are turned in at least twice during the course, as their personal concept evolves through course learning
24. Require that students use references that are no more than 3-5 years old, depending on your field of study
25. Base assignments on class readings
26. Give narrow assignment topics
27. Evaluate the research process and the product
28. Work with your library staff to design assignments and prepare materials on plagiarism and research techniques
29. Have students post papers to the discussion board and have other students pose questions for the author’s response
30. Require that students turn in their bibliography or references prior to the due date for the paper
31. Require that students turn in their drafts prior to the due date for the paper
32. Require that students write a concept paper and project plan prior to completing an assignment

Ideas for Syllabi: Use the syllabus to communicate with students about the policing, prevention, and virtue approaches being used.

1. Repeat the campus academic integrity statement and a link to campus policies
2. Include a description of academic dishonesty
3. Include information on repercussions for academic dishonesty
4. Include statements about expectations for one another
5. Include information about writing center, library and other support
6. Include links to plagiarism information, including self-tests and examples
7. Include information on acceptable sources
8. Describe permissible and non-permissible collaboration
9. Indicate that assessments may require follow-up documentation
10. Indicate that assessments may include follow-up questions or assignments
11. Include a statement that you reserve the right to require alternative forms and/or locations of assessments (i.e. proctoring)
12. Include expected time for coursework
13. Include policy on late work (consider some acceptance with penalties)
14. Include policy on test retakes (consider alternate tests or assessment requirements)
15. Indicate if you will drop any test or quiz grades
16. Include a policy on receiving an incomplete

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17. Include a policy on missed tests
18. Include statement about the use of a plagiarism detection service
19. State expectations for student and faculty roles and responsibilities

*Reprinted courtesy of University of Texas TeleCampus.
Compiled by Lori McNabb and Michael Anderson. ☆*

Remote Proctoring: Key to Secure Exam Administration?

By Jennifer Patterson Lorenzetti

Distance education can be particularly prone to academic dishonesty, and attempts to ask students to take tests on “the honor system” can lead to a number of problems. Western Governors University, based in Salt Lake City is a completely distance-based, fully online institution that primarily serves a non-traditional population. However, with a need to ensure the security of exams, the university found itself asking their non-traditional students to submit to traditional proctoring arrangements, in some cases involving several hours’ travel to a testing center. “We needed to find a balance between security and convenience,” says Randall Case, manager of objective assessment development for WGU. “We had to keep the benefits of distance education while somehow making sure the students are who they say they are.”

Online Proctoring

To solve this problem, WGU contracted with Edina, Minnesota-based Kryterion, a provider of an online proctoring system (OLP). The OLP would help WGU insure the security of its proctored objective exams, which are exams delivered via the internet and are comprised of multiple-choice, short answer, essay, and other types of assessment items.

Features of the OLP system

One of the most interesting aspects of the OLP is its

“keystroke analytics,” used as a biometric that ensures that the person taking the exam is the same throughout the exam, and that this person is the same as the one registered under that name for subsequent tests. “It turns out that typing is more unique than fingerprints,” Case says. The OLP program measures the keystroke rhythms of a given user, creating a profile of that user’s typing patterns. WGU had the normal range of questions about the technology, and Case and his colleagues tried to think of ways to foil the technology. “We went through a lot of testing, [like] what if the room is cold?” he says. At the end, he was satisfied with its security, even while acknowledging the limitations of any system. “Can it be beaten? Of course; there’s not a system out there that can’t be,” he says.

In addition to these biometrics, the OLP depends on some readily-accessible technologies to function effectively. During the exam, the system allows access to the questions within a “shell” that disables some of the student’s abilities to circumvent the system, access other information, or acquire the test questions. For example, the student cannot use the control-alt-delete keystroke combination to bring up task manager, nor can they print a page or surf away to a different URL.

Students are given a webcam by WGU, and this device allows for real-time proctoring by an individual working for Kryterion. At the same time, the test-taking event is digitally recorded for future reference if needed. The contract between Kryterion and WGU specifies the number of students a given remote proctor can observe at one time; Case notes that this number is less than the number of students in a traditional class.

Overall, Case is pleased with the system and with Kryterion. He notes that the remote proctoring is priced by volume, and that the company is “very easy to work with.”

Who should use remote proctoring

At first glance, remote proctoring seems a natural fit for an all-online university like WGU, which has no physical site at which to administer exams for all of its students. The large online population also justifies the expenditure on an outside service.

However, Case points out that OLP “has applications across different educational venues.” For example, the Federal government has recently taken an interest in academic honesty in distance education through the Higher Education Opportunity Act, requiring schools to have methods in place to validate the identity of students when they take assessments. A system like this could be a

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worthwhile investment in determining identity and creating a record of the exam if needed.

This focus on assessment security “is causing campuses to rethink how they do on-campus exams” as well, says Case. He notes the increasing numbers of institutions that no longer allow faculty to proctor their own exams, creating a tremendous need for proctors and testing space. This is particularly true if students have to vie for space in a testing center to take an exam they schedule at their convenience rather than at a regularly scheduled class time. Administering exams in a large classroom, on the other hand, can require multiple proctors and opens itself up to various types of academic dishonesty.

Limits of the OLP system

It takes additional time to train the student on how to use the OLP system, although the students typically require this extra time only on their first exam with the system.

“People usually are confident after a couple of uses,” Case says.

Additionally, although the system is quite secure, no system can be iron-clad, as Case acknowledges. “There is a question of face validity,” he notes. However, similar problems are also true of in-person proctoring.

Finally, Case identifies a technological limitation of using OLP: the student must have access to high-speed, broadband internet in order for the system to work effectively. This can be tricky in rural areas that often do not have the infrastructure for broadband and rely instead on satellite for their high-speed access. “Satellite is iffy,” Case says. However, if a student does not have access to broadband internet, WGU allows the student to take an exam at a test center instead.

As time goes on, there is more proof of concept of the idea of remote proctoring. In early November, Kryterion and the Penn State University World Campus announced the results of a pilot of the technology in two distance education courses. They found that using the OLP dramatically decreased the time previously required to move exams in hard copy from university to proctor to student and back, a process that could take three to four weeks and dilute the value of an assessment.

Overall, systems like an OLP may solve many problems for an institution concerned about legal compliance with authentication requirements and issues of academic honesty. Whether a pre-packaged solution like the one from Kryterion is right for any one school is a matter for individual consideration.

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A Chink in Our Armor: Can Technology Provide a True Online Proctored Exam?

By Christopher Hill

Based on most indicators, distance education in America is doing fine. Registrations are growing proportionately much faster than those for conventional programs. New technologies are fertilizing exciting developments in pedagogy. But lagging behind the triumphal procession are nagging pockets of resistance. One of those has to do with testing. It would all be so simple if there were a way to administer a dependably proctored exam online.

“We’re seeing traditional four-year colleges that are really growing their distance ed programs, but they haven’t found a solution for testing,” Pam Cabalka, Vice President of Distance Testing for Kryterion, Inc., says.

That’s what brings us back to Congress. Because pretty soon, it won’t matter if you think you can do effectively proctored testing online. You’ll have to. “Right now the Re-Authorization of the Higher Education act is being negotiated between the House and the Senate. There’s actually a warning in both of those versions that indicates that distance ed programs are going to need to demonstrate that the person who receives the credential is the person who actually did the work.”

She says she’s interviewed hundreds of people in distance ed programs in higher ed who have told her that they avoid proctored testing because they don’t know how to do it securely. So schools don’t do any testing at all. Many distance educators of a more modern pedagogical approach, have thrown up their hands and said “Who needs it?”, maintaining the old final exam is a thing of the

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past, and that there are dozens of new and more sophisticated way to assess student learning.

That's partly true.

But there are plenty of times when you just can't get around it. How, says Cabalka, do you teach an undergrad math class, a statistics class, without having a proctored test? "In pre-professional, licensure or certification training, proctored testing clearly has a place in distance education."

"Where appropriate, you should be able to have a proctored test. You ought to be able to do it in a model that fits the whole distance ed environment."

For those under the legislative gun, Cabalka goes through some of the issues that governmental pressures will soon bring out in sharp relief.

Depending on the situation or the class, there are many kinds of assessments that can be brought to bear, and all of them have some value. The problem is, that for a definitive documentation that you've mastered a body of knowledge, sometime, nothing will do but an old-fashioned final exam. Making that work with the distance education mantra of "anytime, anyplace" has proven to be difficult. In fact, a final exam is the embarrassing little secret of the online course. All of a sudden, you have to be at a very particular place, at a very particular time, and even with particular people. After all the litany of distance ed's flexibility, you wind up your course of study doing things at someone else's convenience.

"It has been clear that unlike much else in the field of distance education, computerized testing hadn't changed in a long time, or changed in the way it should," Cabalka says. Usually, with successful applications, the technology evolves in the direction of being less expensive and more ubiquitous. And observers just haven't seen that happening with testing. "So we decided to change the way secured testing has been done," Cabalka says.

Kryterion has brought together pieces of existing technology and pedagogy into an application that appears (it's still in testing) to answer most of the key demands.

There have been two primary testing models, for a single high-stakes "final exam." One is actually coming to campus and taking a test in a testing center, with school employees proctoring the exam.

Then there's the "go find your own proctor!" model. In which you do just that—you find your own. The school abdicates. (Of course, the school retains the right to approve the student's choice.) Maybe it's a librarian or a teacher or a member of the clergy, or someone who can show they have proctored honestly before. On a military base it might be the education officer. The common de-

nominator is it's a hassle for the students. There are some places where the student is required to line up multiple candidates and the department chooses. The theory being that it's less likely to get three people to collude with you than just one.

Some organizations offer what they call a secure online testing solution, wherein they lock down their browser so that when the student is taking the test, they can't get outside that browser onto the internet. But that still begs the question of whether or not it's the right person taking the test? How do you know, as Cabalka asks, that they're not sitting there with their "smarter older sister"?

"Other providers have tried various things and all of them are fraught with problems, whether its expense or inconvenience, or the opportunity to cheat," Cabalka says.

"People are frustrated. In some cases they can't even conceive of a solution, outside the traditional methods."

It was clear that a real solution to the testing dilemma had to include:

- Convenience for the student
- Affordability for the institution
- Genuine anytime, anywhere functionality
- minimal hardware requirements for the student; and last, but most important
- Security: Positive ID of the test-taker, with minimal opportunity for cheating.

There are three components to the security element

1. How do you make sure it's the right person?

"We started by exploring the fingerprinting path, but we got quite a lot of pushback," Cabalka says. The academic part of their market bridled at the Orwellian intimations.

That's when the breakthrough came. It was called keystroke authentication.

It wasn't an original technology, and since the 60s it's been used for a variety of applications. Cabalka came upon it, she says, coincidentally. Keystroke identification's big idea is that everyone who ever types has a unique typing pattern. Whether you're a hunt and peck typist or whether you're a top-flight executive assistant, you have keystroke pattern that will identify you as clearly as a fingerprint. Maybe more clearly.

It's been demonstrated to be at least as accurate as fingerprinting. It has a three percent false negative—three percent of the time the right person has difficulty getting into the system. And it has a one percent false positive—one percent of the time the wrong person gets in.

Though keyboard authentication makes use of a lot of sophisticated math, the math is basically there to measure

something called flight time and dwell time. Flight time being the time and patterns when your fingers are between the keys, and the dwell time being basically how long they're holding the key down.

"Our students type in a phrase that we give them nine to 15 times—that's all the computer will need to learn to recognize the keystroke pattern. And then once that pattern is locked in—I could give you my user name and password and you're not going to be able to get into the system."

At the other end of that webcam, in a remote location there is a bank of live proctors watching the student take the test through that webcam. The webcam is set up to show face, keyboard, and hands. While they're taking the test they're being video-recorded and audio-recorded.

One of the questions that comes up is what if somebody is standing behind the computer, or what if there are notes on the wall. What, in short, will happen in there's any sort of suspicious behavior? The proctor who's watching might say, "Pick up that camera and zoom it around the room."

That's part of another piece of this testing process, something called real-time data forensics. "We've built it into the technology that measures test response patterns," says Cabalka. "For example, let's say a student is answering the questions on this test, and they're going really fast and they're getting them all right. Not that doesn't say they're cheating but it would raise an alert. Some observer will say, 'Wait a minute, this is outside the norm. We'd better look into this.' There are a number of other examples. The browser may be locked down, but the student might nonetheless hit a print command. That might be totally innocent, or he might have wanted to print out the questions for his friends. Likewise if he picks up his cell phone. That action would set off an alert. A proctor will come over and take a look and see what they've been doing.

"The client institutional determines what are the behaviors that they want to have trigger alerts. They client can assign the proctor any option up to canceling the test."

There are two basic ideas in this approach. One is to deter students from ever trying to cheat, and two: You need to back that up with the real ability to catch them if they do. The preferred tactic is to put in enough technological snares, surrounding them with so much hardware and software, that the student will think twice before they ever think about doing anything. "And then, second, we really do have the mechanisms in place to catch them if they do."

This may sound expensive—and it will undoubtedly be more expensive than some of the other options that are out there. But Cabalka says that a typical team of proctors will be very cost-effective—capable of handling somewhere

between 100 to 150 students at a time. She points out that the decision to go with their system does not have to be forced on an entire institution. Some of their test clients have been at the departmental level.

There is a relatively small maintenance fee for membership, and after that the client is only charged for the number of tests they administer.

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Practical Tips for Preventing Cheating on Online Exams

By David M. Eplion, PhD, and Thomas J. Keefe, PhD

For as long as there have been exams, there has been cheating on exams. Online exams are no different, although they do provide some challenges that set them apart from traditional face-to-face exams. These include a heightened opportunity to collaborate with others, greater possibility of using unapproved resources, and an increased likelihood that someone other than the student is taking the test.

These problems are not insignificant and do not have easy answers. In spite of these very real challenges, we still wanted to offer online exams to our students because they present a number of important benefits. These include quicker and more accurate grading, more time to spend in class covering important topics, and faster feedback for the students. We decided that we needed to take steps to identify and prevent cheating on our exams and we will share some of our experiences in this paper.

Who we are, what we do

We teach undergraduate business courses at a regional campus of Indiana University. All our classes meet face-to-face for three hours a week, but we administer our exams online outside of normal class time. Our exams are both multiple choice and true/false in nature, and the students take three of them throughout the semester.

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On our syllabus, we describe the nature of our online exams and also list a testing protocol. During our first class meeting, we go over the protocol in detail. We also include a section of the protocol on every exam. In part, it reads, “This is not an open-book or open-notes exam. This exam is to be taken during the allotted time period without the aid of books, notes, or other students. You have approximately 45 seconds per question to complete this exam. This exam must be taken online from start to finish. Do not download the test to take it or distribute it to anyone. The statistics feature...will monitor and report how you take this exam.”

These guidelines ensure that our students know exactly what is expected of them. In essence, they define for all involved what is and is not considered cheating on our exams.

The importance of courseware

Our first suggestion for helping would-be online exam administrators detect cheating is to use professional courseware. We use a proprietary system called Oncourse, but other commercially available products such as Blackboard and WebCT are very similar.

Courseware packages are valuable in many ways. To begin, they can be used to password-protect the exam. This helps reduce the possibility that unauthorized people will access the exam. Courseware also tracks the exact time the exam was started and finished. It also can log IP addresses that can be used to trace the location from which the exam was completed.

Taken together, this information can help an instructor find cases where students may have collaborated on the exam. If two or more students take the exam at or about the same time from computer terminals in proximity (as indicated by the IP addresses), there is a possibility that cheating has occurred, and we pursue these cases further.

Sometimes there is a perfectly innocent explanation for this. Other times, it becomes evident that cheating has occurred. However, because “cheating” is such a charged word and can be difficult to prove, we avoid accusing students of it. Instead, we try to document the fact that our exam protocol has been violated. One of our protocol stipulations is that students not take the exam in the same room at the same time. If we can document that this occurred, we do not accuse the students of cheating. Instead, we simply tell them that the protocol has been violated and that we will not accept the results of their exam.

Courseware also helps make sure timing protocols are not violated. We make our exams available to students only during very narrow time windows. This helps lessen their

opportunity to recruit others to help them take the exam. Courseware blocks access to the exam before it is scheduled to begin and restricts access to it after the deadline.

Courseware also keeps track of the total amount of time students spend taking the exam. We have found that giving students an unlimited amount of time to complete the exam creates more potential for collaborating with others or for bringing in material that is not approved. Courseware puts a strict timer on the exam.

If a student has not finished the exam within the allotted time, courseware simply submits to us the student’s progress to that point. For our exams, we have found that allowing students 45 seconds per question gives them enough time to think about and answer each question while not providing so much time that they are tempted to violate our testing protocol.

Test design matters

While courseware is a valuable tool in the fight against cheating, a poorly designed test can limit its effectiveness. Over the years, we have found that there are ways to structure a test that help cut back on cheating.

One strategy is to scramble all the test questions for each student. Courseware also does this for us. In addition, we are able to create a large database of potential questions and then let Oncourse randomly select a subset of questions for each student. It makes it very difficult for students to collaborate when each student’s test is markedly different from everyone else’s in the class.

We also prefer to ask application-based questions as opposed to asking students to just recite facts from the text. Application questions require that students not only know the basic material, but that they also know it well enough to apply it to practical situations. This helps reduce the benefits of using unapproved materials on our exams.

Course design can help as well

The final tool we use to minimize the impact of cheating is our course design. In addition to the three exams we have students take online, we also have them complete nearly 20 graded pretests. Requiring that more than 20 assignments be completed online makes it more difficult for students to recruit others to help them. It either gets very time-consuming or very expensive for them.

We also require a cumulative final exam that is heavily weighted and is administered face-to-face. Because the cumulative final is worth so many points, students must know the material if they hope to successfully complete our course. If they have had someone else take the exams

for them over the course of the semester, they will pay for it when taking the final.

Fortunately, we have run statistical analyses that suggest a very strong correlation between performance on the online exams and performance on the face-to-face cumulative final. This suggests that we have had success with our efforts to detect and limit cheating in our classes. We plan to continue to employ these methods in the future.

Still, since no strategies will totally eliminate cheating on exams, we are always looking for new and improved ways to be even more effective. And we welcome any suggestions or comments that the readers of this article might have for us.

David M. Eplion is an assistant professor of business management at Indiana University Southeast. Thomas J. Keefe is an associate professor of business administration at Indiana University Southeast.

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Identity Gift: The Opposite of Identity Theft?

By Aimee J. Luebben, EdD

The media are full of scary tales of identity theft. Aware of vulnerability, people are becoming increasingly cognizant of what might happen if their electronic identities are stolen. The outcomes range from a reputation temporarily damaged to financial ruin, with increased physical and emotional stress along the way.

I recently discovered what I believe is the academic equivalent of the polar opposite of identity theft. The topic came up in conversation with a student who mentioned not having an Internet connection over a weekend, so another student “dropped off” an assignment before the due date.

The assignment was one of many in a course delivered online via an electronic classroom management system. After years of using a master drop-box feature, I redesigned

the course to include individually designated assignment links directly connected to the electronic gradebook. With this change, I stopped receiving calls and e-mails from students asking whether I received a particular assignment, because they could check “delivery” status themselves.

With the assignment link method, I began downloading each assignment from an individual gradebook cell: the intersection of a student row and the assignment column. Then I realized the efficiency and superb record-keeping capacity of using the item download feature. The item download allowed me to create and store a zip file that included all submitted assignment attachments as well as any user comments students wrote when they submitted individual files to specified assignment links.

In listening to the student, I heard myself saying, “Wait a minute! Back up. Am I hearing you say that someone else submitted your assignment?” When the student verified my disbelief, I continued, “That means someone else can use your username and password to log in as you.” I was dumbfounded. The possibility of such a scenario had never crossed my consciousness. For once in my life, I was unable to reply.

I remembered I had discovered anomalies in grading the assignment. Seeking explanations for the anomalies, I learned more than I ever imagined about the forensic capabilities of word processing and spreadsheet applications. I was able to complete a puzzle from the electronic trail, but one puzzle piece did not fit. Within the zip file, I had found two student submissions, each with the same file name.

Having identical electronic titles was significant not only because the name was exactly the same, but because neither file conformed to designated student file name requirements. In addition, I found in the statistic summary section of the properties feature (in the word processing application) that both files had the same person’s name in the “last saved as” line. The only difference between the properties of the two electronic files was the revision number: one file was revision number 1 and the other revision 2. (Interestingly, the second revision of the file required zero minutes.)

I had left the puzzle incomplete because I could not fit that last piece—an explanation of how two files with the same person in the last saved as line could have submitted by two different students. That last puzzle piece clicked into place in the midst of my conversation with the student. Suddenly I realized that if one student had the username and password of two different students to submit an assignment, the person in the last saved as line would be the same. When I finally found my voice, I said, “You

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just gave a classmate your academic identity.”

As I moved further from the conversation, I began thinking of ramifications. I also wondered what the opposite of identity theft might be. I realized that a number of events might happen if a student were to give a username and password to another person. A second person could assume the academic identity of the student who provided the gift and become transparent to the system. The first student might find bogus assignments submitted; assignments (that had been previously submitted) removed; or electronic impersonation on discussion boards, in chatrooms, and in e-mails to students and faculty enrolled in the virtual classroom.

I decided that maybe identity gift is the opposite of identity theft. Or perhaps the term should be identity present, to play on the idea of time: something happening in the present that could impact the future.

Aimee J. Luebben, EdD, OTR, FAOTA, is professor of occupational therapy at the University of Southern Indiana.

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