PRAGMATIC METHODS TO REDUCE DISHONESTY IN WEB-BASED COURSES

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The Internet, coupled with technology, has enabled institutions of higher learning to offer online distance education classes to a worldwide student body at an increasing rate. In the next 5 years it is estimated that nearly 90% of universities will offer online classes. Unfortunately, the news is not all that good. Students are now cheating at an all time rate. The very nature of distance learning appears to actually nurture academic dishonesty on the part of its students. This article will present some practical suggestions to reduce the occurrence of cheating by students enrolled in online higher education classes.

INTRODUCTION

According to the United States Department of Education, the growth of online distance education courses offered by universities in the United States experienced rapid growth in the 1990s (U.S. Department of Education, 2003). Actual enrollment for distance education courses approached 3 million during the 2000-01 academic year (Kiernan, 2003). Continuing education and distance learning will grow 10 times faster than on-campus growth over the next 10 years (Burns, 2006).

The reasons for the increased popularity of online distance education courses have been well documented, and include:

- Universities offer a wide range of subject areas online from art to zoology;
- Classes are accessible when students have available time, for example, students are not required to be at a specific class at 8 A.M. (this eliminates the time-bound requirement for students);
- Online learning does not require physical attendance at a specific geographical location (this solves the problem for place-bound students);
- Courses are available 24/7, allowing students to study at home, work, or on the road (World Wide Learning, 2006).
- The final reason for online popularity, "on the road," is best confirmed by the recent emergence of students enrolled in

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the numerous online MBA degree programs being offered all across the country (Beal, 2003; Fisher, 2003; Gale Group, 2003).

Although positive benefits accrue from students taking e-learning courses, there are some significant drawbacks. The most noted include: some students might be technophobic; students lack the required technologies; and, more importantly, students experience a reduction in social interaction, the suppression of communication mechanisms, and the elimination of peer-to-peer learning (Kruse, 2002). Perhaps the largest drawback to online learning is the possibility of academic dishonesty on the part of the students enrolled in class.

ACADEMIC DISHONESTY

In grade school we heard the axioms, "Honesty is the best policy" and "Cheaters never win, and winners never cheat." But this is today, how many college students have actually cheated on an exam during their undergraduate work? Apparently, the majority of college students cheat. These are the findings presented from the first comprehensive study on cheating by college students. The study concludes, "Academic dishonesty, or cheating, is a ubiquitous phenomenon in higher education" (Bowers, 1964). Thirty years later, the next major comprehensive study reported that 70% of the students surveyed, cheated on a test at least once (McCabe, 1993). Student cheating is definitely a concern on college campuses. Other studies have reported between 30% and 70% of students cheated on at least one examination (Baird, 1980; Collision, 1990; Davis, Grover, Becker, & McGregor, 1992; Innerst, 1998; Kritz & Newman, 1991; Maramark & Maline, 1993; Wellborn, 1980).

Cheating Rationale

On children's soccer fields all across America, parents now shout today's axioms: "Winning is everything," and "Nice guys finish last." Winning and being a success are the battle cry of too many parents; being a good sport and having fun receive less attention. When parents cheat by driving too fast or by going through a yellow light, they are teaching their children to cheat (Cummins, 2000). Children observe their parents' actions. Small behavioral actions, regardless of how trivial they might seem to be, however, have a cumulative lasting effect on a child's life long perception of norms. A mom fibbing about her age, or a father's bravado over exaggerated income tax deductions are examples of how parents teach their children to cheat. As if these parents' initial indiscretions alone were bad enough, the problem becomes more profound with their futile attempts at rationalization. Parents respond with the following inept rationalizations: "Everyone lies about their age, and doesn't everyone cheat on their income tax?" Thus, our children learn to cheat, and the rationalization process begins early in a child's life (Murdock, 1999; Whitley & Keith-Spiegel, 2001).

Many studies have documented the reasons why students cheat, including: fear of failure, desire for a better grade, pressure from parents to do well in school, unclear instructional objectives, and being graded on a curve (Evans & Craig, 1990). Other studies report: Everyone else is doing it; I see others cheating; It helps me get better grades, a good job, or admitted to graduate school; I see no reason not to cheat; There is little or no chance of getting caught. There is little, or no, punishment if I did get caught (Alschuler & Blimling, 1995). Students believe few cheaters are caught, and that punishments for cheating are generally lenient (Bowers, 1964).

And finally, one professor notes: "In one of my interviews, a student wrote that anything worth having is worth cheating for" (Whitley, & Keith-Spiegel, 2001).

Reducing Classroom Dishonesty

There are many methods used to reduce the amount of student cheating. Diligent professors can virtually eliminate cheating using

multiple versions of the same test, having additional proctors oversee the classroom, and by giving verbal warnings about cheating. Using tenured or tenure-track faculty tends to reduce cheating. Using only teaching assistants in a classroom will increase the amount of cheating (Kerkvliet & Sigmund, 1999). Additional research has reported colleges having a strict honor code, coupled with solid pressure from their student peers will discourage students from breaking the rules; and parents and teachers communicating early with students of grade school age will reduce the amount of student dishonesty (Anderson & Obenshain, 1994; Bowers, 1964; Gomez, 2001; McCabe, 1993; McCabe & Bowers, 1994; McCabe & Trevino, 1993; Newstead, Franklin-Stokes, & Armstead, 1996; Whitley & Keith-Spiegel, 2001).

Some experts say reducing competition among students will reduce student cheating, because the pressure to succeed clouds the judgment of many students, making cheating easy to justify and hard to resist. Other suggestions for professors to reduce the amount of student cheating include: affirm the importance of academic integrity. Encourage students to ask questions if they don't understand the material in class. Establish an honor code (Fishbein, 1993, 1994; Jendrek, 1989; Lathrop & Foss, 2002).

Reducing Distance Learning Dishonesty

Unfortunately, cheating also occurs by students enrolled in online distance education classes. According to research conducted, 64% of university professors perceive that it would be easier for students to cheat during online exams. Similarly, 57% of students also believe it is easier to cheat on exams offered in online classes (Kennedy, Nowack, Raghuraman, Thomas, & Davis, 2000).

Several suggestions have been offered to reduce academic dishonesty in Web-based courses (Christe, 2003; Kelley & Bonner, 2005; Olt, 2002). However, many of these suggestions are simply not practical, too time consuming, require technical expertise, and are somewhat costly for the average professor at a state university. This article presents a more pragmatic approach for the university professor, requiring only a few mouse clicks on a PC.

SUGGESTED PRAGMATIC APPROACHES TO REDUCE ACADEMIC DISHONESTY

Four practical courses of action are suggested for professors to reduce the amount of cheating by online students: (1) disseminate information to distant students; (2) change the process used by students to turn in written assignments; (3) change the process by which exams are administered; and (4) create a nonsequential chapter assortment of questions.

Disseminate Information to Distant Students

This section summarizes the research reviewed earlier in this paper. The following straightforward methods are easy to implement into online higher education classes:

- Inform students by using emails, posting announcements, and incorporating into a syllabus that honesty is the best policy.
- Using the same dissemination methods, notify students that cheating will not be tolerated.
- Professors should warn students that there are strict penalties for cheating.
- Provide a link to a student honor code document.
- Inform students of the professor's qualifications, degrees, consulting work, *pro bono publico*, community leadership roles, grants received, and vita accomplishments.
- Post clear cut course learning objectives. From the first day of class, professors need to communicate to the students an exact list of the requirements necessary to obtain a specific grade for the course.

- Reduce the pressure to get grades. One way to reduce the pressure to get a good grade is not to "curve" student grades. Many professors curve their grade distribution so that a certain percentage of students will receive an A's, B's, C's, D's, and F's. If students perceive a class to be too competitive, the propensity of cheating increases. Therefore, in order to limit academic dishonesty, professors could develop a point system of grading. For example an A grade is equaled to 900 points or more.

Change the Process Used by Students to Turn in Written Assignments

The incidence of plagiarism will theoretically be reduced by changing the process used by students to turn in assignments. Instead of handing in printed hard copy assignments, students should be required to hand in their assignments electronically. Professors then submit the electronic versions to a plagiarism recognition software product. Professors using Blackboard have an available tool called Turnitin to identify plagiarized work (Blackboard, 2007). To detect plagiarism, Turnitin software compares an individual student paper with Web pages, past student papers, newsworthy articles, and academic publications (Turnitin, 2007).

Change the Process by Which Exams are Administered

The third course of action a professor could easily incorporate into an online class would be to change how students take the exams. The newest version of Blackboard's Web site course development system enables a professor to change how students take exams online. A professor teaching an online course has several Blackboard options that predetermine how students will take exams. The first step consists of importing a course cartridge into a Blackboard class Web site. Course cartridge modules are offered directly from the publishers of most textbooks. The course cartridge developed by the publisher contains the usual material found on their CDs, such as key terms, definitions, study guide, cool Web links, and a computerized test bank. It is an effortless task—simply type in the course module code when prompted in the control panel. The course module is then uploaded automatically to a professor's Web site.

The second step is to create an exam from a "pool" of potential questions from the cartridge. This is easily done using Blackboard by going to the control panel, clicking creating an exam, and selecting the type of questions desired from a pull-down menu. For example, exam 1 may be composed of 40 multiple choice questions selected randomly from a publisher's pool of questions, covering chapters 1 and 2.

The next step configures how the exam will be taken by students. Blackboard's Web course development system offers several test options. The suggested options to include are:

1. Select the tightest time frame possible for students to complete each exam. Most professors have suggested to me, depending on the nature of the questions and the difficulty of the subject material, 40 questions in 40 minutes. I disagree. I suggest 40 questions in 30 minutes. (You will need to perform some trial-and-error exam attempts, with last year's students, to determine the least amount of time allotted for the exam.) A tight time frame will discourage students from cheating. Students will barely be able to complete the exam and will not have time to thumb through the text looking for answers.
2. Select the option "show one question at a time to the student." This will discourage students from conducting a "copy and paste" into a document and then printing out the entire exam. Copying and pasting one question at a time will be very tedious and time consuming task. Plus, students will go beyond the allotted exam time period.

3. Select "no backtracking" on the part of the student. Once a student has selected an answer, do not allow him or her go back and see the prior questions.
4. Select "randomizing" the exam from a pool of questions.
5. Select allow the exam to be taken for an entire week. This reduces the time pressure to cheat.
6. Create a large number of exams to be taken during the semester—for example, 10 exams. Yes, perhaps a student will persuade a sibling or friend to take an exam and cheat for him or her once. But, will the sibling or friend agree to take 10 exams?
7. Set a low point value for each exam; say, 5% of the total semester points for each exam. This will reduce the pressure to cheat on an exam since the exam is not worth a large percentage of their grade.
8. Finally, select "allow multiple attempts" by students to take the exam. Students are allowed to take each exam as many times as they wish during an entire week, but each time they retake the exam, a new set of randomized questions appear. An additional bonus, for students taking the exams as many times as they wish, will be learning.

Create a Nonsequential Chapter Assortment of Questions

The final suggested method to reduce Web cheating is based on the sequencing order of questions. The nonsequential exam method is a system of staggering exam questions by chapters in a nonpredictable assortment. This is accomplished by importing more than one course cartridge from the publisher of the text used by the class.

Without the nonsequential exam method, the professor will usually import one course cartridge from a textbook publisher into the Web site powered by the Blackboard Academic Suite. The learning cartridge contains, among other items, a pool of exam questions developed for each chapter of the textbook. After a successful importation into the Blackboard Learning System, the professor creates an exam by one of several methods. The random block is one potential method used by a professor that desires granting students the ability to take an exam a multiple number of times. The professor selects the chapters to be covered in the exam. For example, exam 3 might contain 60 questions covering chapters 5, 6, and 7. Each time the student repeats exam 3, the exam will randomly generate a new set of questions from the exam pool. The new exam usually has a mix of questions from the previous exam and new questions from the pool. During the exam creation process the professor will request 20 questions from chapter 5, 20 questions from chapter 6, and 20 questions from chapter 7. When the exam is taken, the student will be presented with the same sequential order of questions: 20 questions from chapter 5; 20 questions from chapter 6; and 20 questions from chapter 7. The above-noted procedure, using only one cartridge, will tempt the student to open their textbook and follow along the exam by the sequential chapters.

To reduce academic dishonesty, the professor needs to import multiple course cartridges from the textbook publisher. The procedure is as follows. A professor using the Blackboard Learning System as the software platform to drive the Web course will click the control button and request the course cartridge three times. Usually within about a day, the Web site will be populated with three duplicate exam pools of questions. For the same hypothetical exam 3 containing 60 questions, the professor might select, for example, 5 questions from chapter 6, 7 questions from chapter 5, 6 questions from chapter 7, 4 questions from chapter 5, 6 questions from chapter 7, 9 questions from chapter 6, 8 questions from chapter 7, 9 questions from chapter 5, and 6 questions from chapter 6. It does sound complicated but, in reality, the nonsequential chapter exam method takes only a couple of extra minutes and is as easy as click, click, and click. The

TABLE 1
The Nonsequential Chapter Exam Method to
Reduce Academic Dishonesty by Web Students

Chapter	*Number of Questions Selected*	*Cumulative Amount or Each Chapter*
6	5	5
5	7	7
7	6	6
5	4	11
7	6	12
6	9	14
7	8	20
5	9	20
6	6	20
Exam 3, 60 questions from Chapters 5, 6, and 7.		

nonsequential chapter exam method is perhaps more easily understood by perusing Table One. Obviously, there are numerous other potential nonsequential exam method variations available that can be used to construct exams.

FEEDBACK

In an effort to determine the merit of the suggested pragmatic methods, a survey of Web-based students was implemented. During a 3-year period, 149 students were asked to complete an online survey asking questions concerning their online experience. By using Blackboard's survey feature, their identities were hidden from the professor. Assurances were also given to students guaranteeing their anonymity.

The overall results of the student feedback survey were extremely favorable. For the first question in the survey, 81% of the students reported taking each exam two to four times, whereas 10% indicated that they take each exam more than four times. The next survey question showed, on average, that 70% of students increased their exam scores in a range from 10-20 points (exam = 100 points). Table 2 presents the results to the next question, "How important to you, is the ability to take an exam as many times as you wish during the semester?" Students reported: 63% very important, it really helps; 23% important; 8% neutral, it does not help, or hurt; 4% slightly not important; and 2% not important. As seen in Table 2, an overwhelmingly high amount, 86% of the Web students, reported a positive observation of being allowed to take each exam multiple times.

Presented in Table 3 are the equally positive results concerning the quality of learning as perceived by the Web students. Only 8% of the students reported a less-than-average learning experience, while the majority, 63%, reported a very positive learning experience, as compared to other Web classes.

Tables 4 and 5 report the students' perceptions of cheating in a Web class that has implemented the pragmatic methods to reduce Web course dishonesty, as suggested in this paper. As seen in Table 4, "Cheating in this web class compared to classroom courses," 17% of the students reported that the average student will cheat more in this Web class than most classroom courses, while 42% of the students reported that the average student will

TABLE 2
Importance of Taking Multiple Exam Attempts

How important to you, is the ability to take an exam as many times as you wish during the semester?				
Very important it really helps	*Slightly important*	*Neutral, it does not help, or hurt*	*Slightly not important*	*Not important*
63%	23%	8%	4%	2%

TABLE 3
Student Learning

Because I am able to take an exam as many times as I wish to improve my score, I receive instant feedback and learn the material. (Compared to other web courses), my learning increased in this class:				
Less than most web courses	*Slightly less than most web courses*	*About the same*	*Slightly more than most web courses*	*More than most web courses*
4%	4%	29%	40%	23%

TABLE 4
Cheating in This Web Class Compared to Classroom Courses

As compared to other classroom courses, do you think the average student, in this Web course, can cheat:				
More than most classroom courses	*Slightly more than most classroom courses*	*About the same*	*Slightly less than most classroom courses*	*Less than most classroom courses*
2%	15%	41%	10%	32%

TABLE 5
Cheating in this Web Class Compared to Other Web Courses

As compared to other Web courses, do you think the average student, in this Web course, can cheat:				
More than most web courses	*Slightly more than most web courses*	*About the same*	*Slightly less than most web courses*	*Less than most web courses*
1%	2%	27%	17%	53%

cheat less than most classroom courses. Table 5 compared cheating in this Web class compared to most Web courses. The results of Table 5 indicate only 3% of the students reporting cheating more (in this Web class) than most Web classes, while a great percentage, 70%, reported that the average student can cheat (in this Web class) less than in most Web courses.

SUMMARY AND CONCLUSIONS

The foundation of this article has been to report the increasing enrollments in online distance education courses, document the occurrence of academic dishonesty by college students, offer the rationale given as to why students cheat, and present suggestions to reduce cheating in both classroom and online

higher education courses. After the groundwork for this article had been established, an easy-to-use pragmatic method to reduce academic dishonesty was then proposed.

In an effort to evaluate the pragmatic method, feedback was obtained from students through the use of an anonymous online survey. Overall, the results were very constructive. Students were satisfied with the amount of the learning they achieved. Students appreciated the ability to take each exam multiple times. Most importantly, students reported a lesser incidence of online cheating compared to other Web classes. The results presented in Tables 4 and 5 reported a lesser perception of cheating in online classes compared to previous research (Kennedy et al., 2000). This tends to confirm the merit of the pragmatic method to reduce online cheating.

Widespread student academic dishonesty is an unfortunate situation faced by university professors. Nonetheless, professors developing online courses might reduce student cheating by following the recommended pragmatic methods suggested in this article.

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