

Using auditing concepts to discourage college student academic misconduct and encourage engagement

Daniel Tinkelman
Hofstra University

ABSTRACT

This paper shows how concepts from the field of auditing corporate financial statements can be applied to the academic problems of deterring college student academic misconduct and encouraging engagement in learning. Relevant concepts from the auditing literature include: the idea of materiality; the distinction between errors and fraud; the “fraud triangle”; and the usefulness of enterprise-wide internal control frameworks. This paper suggests how these concepts, together, allow a holistic approach by college faculty and administrations to academic misconduct issues.

Keywords: Academic misconduct, plagiarism, cheating, fraud triangle, internal control frameworks



INTRODUCTION

This paper suggests that several concepts used in auditing financial statements for misstatements are relevant to faculty trying to encourage academic honesty in their classrooms and to schools trying to formulate holistic, institutional approaches to student academic misconduct issues. These concepts are: materiality; the distinction between errors and fraud; the “fraud triangle”; and formal internal control frameworks.

There is an extensive literature on academic misconduct among college students, and ways to try to deter or detect it. This paper adds to the literature in two ways. First, it uses auditing concepts to structure the findings of prior research on academic misconduct into a compact and accessible form for analysis. While prior literature (cited below) has applied the fraud triangle to student dishonesty, the discussion here of formal control frameworks is new. Second, while the fraud triangle is traditionally used to find ways of *discouraging* negative actions, here it is also used to frame ways of *encouraging* the types of positive behavior called for by the Center for Academic Integrity (1999): honesty, trust, mutual respect, fairness and individual responsibility. This paper suggests ways to give students the incentives, opportunities, and reasons to engage positively in their courses.

The next section discusses the relevant auditing concepts: materiality; errors, fraud, the fraud triangle and internal control frameworks. The third section briefly describes prior literature regarding both the scope of the issue of academic misconduct in colleges and why students cheat. The next section applies the COSO internal control framework and the fraud triangle to methods of trying to deter academic misconduct. The fifth section suggests ways to apply these auditing concepts to giving students the incentives, opportunities, and rationalizations to learn college materials and skills. The final section concludes.

RELEVANT AUDITING CONCEPTS AND THE CAUSES OF ACADEMIC MISCONDUCT

Financial auditors are taught to search for “material” misstatements of financial statements, whether due to error or fraud. They also advise companies on how to establish controls to reduce the risk of both errors and fraud from occurring and remaining undetected. The key concepts that can be applied to an academic environment are the ideas of materiality, error, fraud and controls. This section uses these ideas as a framework to organize and analyze the literature on causes of academic dishonesty.¹

¹ Other views of the problem present many of the same ideas, albeit organized differently. For example, Bolin (2004) adapted a “General Theory of Crime” from prior literature for academic dishonesty, and suggested the key factors are a lack of self-control, a perceived opportunity, and student attitudes towards cheating. The lack of self-control is most important in impulsive cases of cheating, not requiring planning. Note that the ideas of attitudes and opportunity are present in the fraud triangle as well.

Whitley (1998) presents a model for academic misconduct which, while it contains more stages, contains many of the same concepts as the fraud triangle. His model says an intention to cheat depends on: prior cheating experience; perceived ability to cheat; risk of detection; expected benefits of cheating; attitudes; perceived norms; and moral obligations. The transformation of an intention to cheat into actual cheating is modified by situational factors,

A financial statement may be misstated either by giving wrong information, or by omitting necessary information. Similarly, a student may misrepresent his/her work either by saying it is original when it isn't, or by omitting to indicate sources and other forms of assistance received. It is important for the instructor to indicate what constitutes a misstatement in the class. Preferably, the definition will be consistent college-wide.

A "material" misstatement in a financial statement is one that is important, and would cause a reasonable financial statement user to make a different decision than he/she would in the absence of the misstatement. Similarly, there is a range of seriousness of violations of academic standards. Buying a term paper is a different level of seriousness than failing to cite one source, supporting one sentence, in a 30-page paper that has 56 other citations.

"Errors" are inadvertent. They are due to carelessness, ignorance, or other accidental causes. In an academic setting, students may fail to understand instructions, and not realize, for example, that consultation was not permitted on a homework assignment, or may not understand what types of sources must be cited.

"Fraud" is a deliberate misrepresentation or omission, made to induce someone to believe something they would not otherwise believe. In an academic context, the normal motive would be to induce a faculty member to believe the student has performed at a higher level than the student actually has.

The "fraud triangle" is derived from Cressey's (1953) work on white-collar crime. The idea is that a person is most likely to commit fraud when the three factors of pressure (or incentive), perceived opportunity, and rationalization are present.² The first factor is that there is some great incentive to commit fraud, or a perceived pressure that the person cannot share. In a business context, these pressures might include money pressures caused by gambling habits, drug addiction, children's college tuition, etc., and incentives might include desires to impress superiors with inflated performance figures. The second factor is a perceived opportunity to commit fraud without being punished. In a business context, weak internal controls often give

(continued from previous page) such as steps faculty take to inhibit cheating. The expected benefits of cheating in turn depend on the gap between the importance of academic success and the student's expectation of success without cheating. Pressures such as difficulty of the course, time lost to partying, academic workload, procrastination, etc. contribute to this gap. Again, all these factors can be organized by the fraud triangle.

McCabe (1992), building on earlier work, sorts rationalizations into the five categories of: denial of responsibility (due to factors beyond the student's control); denial of an injury; denial of a victim; condemning the condemners; and an appeal to higher loyalties, such as the need to help a friend. The external factors that the student feels are beyond his/her control and peer pressure to help a friend could be seen as pressures in the fraud triangle, and the other factors fit into the category of rationalizations.

Gallant and Drinan (2006) suggest six key factors in effecting positive change: obstacles; champions; catalysts; structures; procedures; and symbols. These factors can all be addressed using the COSO framework, through actions linked to establishing a proper control environment (including Board action, "tone at the top", proper lines of authority and management philosophy), and setting up specific communication, control, and monitoring procedures.

² Several prior papers have applied it to student dishonesty. See Becker, Connolly, Lentz, and Morrison (2006), Hayes, Hurtt and Bee (2006), Choo and Tan (2008), Malgwi and Rokovsky (2008 and 2009) and King, Guyette and Piotrowski (2009).

people the idea that they can steal, or misstate financial results, without being caught. This view is consistent with Becker's (1968) economic treatment of crime, which assumes criminals compare the likely costs and benefits of their actions. The final factor is the ability of people to rationalize that their actions are not really wrong. In a business setting, executives will rationalize misstating financial data as something they have to do to save the company. Embezzlers may argue that the company was too big to be hurt, or that the employer "deserved it" for unfair practices, or that they "had to" steal to get money needed for more important purposes, or that they intended to repay the money.

Table 1 (Appendix) gives examples of how the concepts of the fraud triangle relate to academic misconduct. Pressures on students might include the impact of unacceptable grade on financial aid or employment prospects, a desire to avoid embarrassment, a desire to impress peers, etc. Contributing factors can include a lack of time to study or to complete assignments, a course's reputation for difficulty, a student's lack of adequate preparation for the course, etc. The key is that the student believes that cheating would be a better way to reduce the pressure than honest academic performance.³ Weak procedures to detect or punish dishonest behavior can give students the perception that they can successfully cheat. This is very important, since research suggests that fear of being caught is an important factor inhibiting students from cheating. See Power (2009) on her discussions with students: "Thirty of the 31 students questioned identified fear of being caught as a primary reason to avoid plagiarism."⁴ Students may rationalize academic misconduct in a variety of ways. They may argue that since everyone cheats, it is not really wrong. They may argue it is necessary for a higher purpose, such as to get a job. They may argue that since the course or the assignment was unimportant to their own goals, it is not important whether they actually learned the material. They may argue that no one is hurt by their actions.

A student perception that other students are cheating has been found to be an especially powerful factor, as noted by McCabe, Treviño and Butterfield (2001). This makes sense, because it affects all three parts of the triangle. Students who see others cheating feel pressure to do likewise, to ensure a level playing field. They also see their peers' success in cheating as evidence of opportunity. Finally, if widespread cheating is occurring, they can rationalize cheating as something that "everybody does" and may assume that the instructor (who has not stopped it) does not care about it. Similarly, the presence and widespread acceptance of an honor code affects all three parts of the triangle, since it reduces the pressure to "level the playing field", increases the risk to violators of being reported by their peers (thus reducing opportunity), and challenges the rationalizations supporting cheating.

The category of rationalization overlaps with the idea of "errors", since students and faculty may disagree as to what actions are, in fact, improper. See, for example, Bisping, Patron and Roskelly (2008). Power (2009), in discussions with students at a Maine college, found many simply did not believe that their unattributed use of words from a published paper for a school assignment in any way hurt the paper's author. In other cases, such as collaboration on homework, the students and faculty may have different expectations as to what is allowed. When different faculty have different guidelines, student confusion becomes more understandable.

Another pertinent concept from the business and auditing field is the concept of formal organization-wide internal control frameworks. In contrast to the fraud triangle, which rests upon

³ In some cases, a student's incentive may be, not fear of failing, but a love of the thrill of trying to beat the system.

⁴ Other research suggests that students see greater opportunities to cheat in online environments, but the research is not conclusive. See King et al. (2009).

underlying theory in psychology and sociology, internal control frameworks are pragmatic tools to try to help organizations meet key goals. Internal controls are policies and practices used to provide reliable financial reporting, and also to help ensure effective and efficient organizational performance. Under the widely known “COSO” framework, discussed in more detail below, companies must pay attention to their general control environment, their risk assessment practices, their information systems, their control practices in specific areas, and their methods of monitoring their control systems. See COSO (1992) and auditing texts such as Louwers et al. (2011). The vast majority of large U. S. public companies now annually report on whether their controls over financial reporting are adequate, using the COSO framework as the criterion. These concepts can be translated to an academic environment. In an academic environment, the learning process should be as effective and efficient as possible, but the measurement of what students have learned, in the form of grades, should be done with as little error and fraud as possible.

PRIOR LITERATURE ON CAUSES OF ACADEMIC MISCONDUCT

There is a long and extensive literature on academic misconduct by college students. Walton (2010) discusses how concerns over academic dishonesty stretch back to the founding of the United States, and Whitley (1998) goes farther by citing a reference to cheating on ancient Chinese civil service examinations. As Robinson et al. (2004) note:

Academic dishonesty has probably existed since the inception of colleges. In turn, essays on student cheating have been around for at least the past 60 years More recently, many popular and scholarly treatises have warned cheating has reached epidemic levels or that student cheating is inherent to the college experience ...

This section does not try to review the literature in detail.⁵ Instead it assumes academic misconduct is a significant problem, without attempting to quantify it or indicate if it is growing over time.⁶ It focuses on the literature on why the misconduct occurs and methods that have been suggested for ameliorating the problem.

In this paper, the term ‘academic misconduct’ is used in a general sense, to include a variety of behaviors that allow students to misrepresent their abilities. It would include inappropriate actions on examinations (copying from other students, bringing in crib sheets, communicating with others, hiring a proxy to sit for the exam, etc.), on written papers and assignments (buying a term paper from an online site, cutting and pasting others’ work without attribution, submitting the same paper to two different courses, etc.) and on other types of work (e.g. faking lab test results, or not participating fully in group projects). As an indicator of how multifarious the topic is, Bisping, Patron and Roskelly (2008) study student attitudes about 31 different improper academic behaviors.

⁵ Cf. Crown and Spiller (1998), Whitley (1998), McCabe Treviño and Butterfield (2001), and Park (2003) for literature reviews, and Davis, Drinan and Gallant (2009) for a recent less technical overview of the topic. See Howell, Sorenson and Tippetts (2009) for a list of methods students use to cheat in distance education courses.

⁶ While findings of increased levels of dishonesty attract attention, see Brown and Emmett (2001) for a study that indicates that comparisons of rates of cheating over time must be done carefully, and that the number of different types of cheating behaviors included in surveys affects the results. They do not find evidence of an increase over the 1930-1999 period, based on analysis of 31 studies.

Misconduct here is viewed from the perspective of the instructor, not the student. This is important: this view includes both inadvertent violations, made through ignorance or misunderstanding, and willful cheating. The situation is directly parallel to the situation in the auditing field, where auditors must be alert for financial statement misstatements, whether caused by unintentional error or intentional fraud. Since errors and willful misconduct have different causes, different preventive measures are needed for each situation. Papers that have made this distinction with regard to academic misconduct include Park (2003), Devlin and Gray (2007), Bisping, Patron and Roskelly (2008), Broeckelman-Post (2008) and Perry (2010).

Why does *inadvertent* misconduct occur? Here, literature suggests causes such as student misunderstanding, unclear directives by faculty, inconsistencies in faculty standards across courses, and laziness by students. In particular, students from other cultures may not fully understand the standards faculty use regarding proper attribution of work. See for example Perry (2010) and Bisping, Patron, and Roskelly (2008).

Studies of *intentional* cheating and plagiarism have found a variety of contributing factors. Various different disciplines have contributed to this literature, including works citing psychological, educational, sociological, criminological and other perspectives. This paper reorders and organizes these findings using the fraud triangle as a framework. Table 1 presents a number of factors, from a variety of studies, sorted by the three categories of the fraud triangle. The listing of studies is illustrative, not complete. Panel A lists factors affecting the pressures on students to cheat, and the incentives they have to earn better grades, while Panel B lists factors affecting the perceived opportunity to cheat successfully and Panel C deals with ways students justify these actions. In the fraud literature, the term used is “rationalization”, but in some educational or psychological literature the more common term is “neutralizing attitude.” This list captures the major factors discussed in the literature that may be subject to efforts to ameliorate the problem. However, demographic variables such as gender and ethnic background, while discussed in prior studies, are omitted herein. It is also important to note that the same student who is honest in one context may not be in another, as the decision to cheat is often made based on situational factors. See McCabe (1992) for a discussion of situational ethics related to cheating.

The three sides of the fraud triangle may have different levels of importance. While Choo and Tan (2008) claim each part of the fraud triangle has explanatory power, Malgwi and Rakovsky (2008) find “pressure” is key. Malgwi and Rakovsky (2008) used survey data from 740 students to rank the relative importance students placed on 35 different possible factors contributing to misconduct, and then used factor analysis to study effects of combinations of factors. Some of the most frequently cited factors were danger of failing the course (79%), possible loss of financial aid (70%), the opportunity to get information from a friend taking the course before (64%), the student had studied hard and deserved to pass (49%), and it was easy to store information on electronic devices (48%). They found that the Pressure side of the triangle was most important to students. “Nearly 70% of the students felt Pressure was the most important, followed by Opportunity with 20% of the respondents. Only 11% of the respondents felt that Rationalization was the most important.”

APPLYING AUDITING CONCEPTS TO DETERRING ACADEMIC MISCONDUCT

As noted above, the problem of academic misconduct has existed for a long time. It is unlikely that any strategy can reduce its incidence to zero. However, considering a variety of

approaches, framed by auditing concepts, can help suggest a logical, holistic approach to reducing academic misconduct. The approaches need to be tailored to the goals and resources of each course and each school. Educators need to decide if the benefit of any approach outweighs its cost, measured either in reduced learning or in dollars spent.⁷ In this section, both the COSO framework and the fraud triangle are used, separately, to suggest methods of reducing misconduct. They provide complementary ways of thinking about the issue. The fraud triangle approach is organized by its focus is on how various actions impact the student, while the COSO framework is organized by the type of action that an organization takes.

Just as companies use the COSO framework to establish a control system that promotes accurate financial reporting, colleges can use a counterpart of that system to promote accurate grading and reporting of student performance. Table 2 (Appendix) illustrates how the COSO framework can be applied to controls over academic misconduct. Colleges need to consider how their overall control environments affect academic integrity and reporting, and establish appropriate risk assessment processes, information and communication processes, control procedures, and monitoring methods to ensure their controls are performing properly.

In the COSO framework, a number of factors are generally cited as affecting the organization's overall control environment, such as the organization's policies on ethical values, the involvement of the Board, management's operating style, the organizational structure, the general competence level of staff, the allocation of authority and responsibility, and human resource policies that align rewards with appropriate performance. All of these factors can be relevant to an academic environment, as shown in Table 2. The Board of Trustees and academic leadership need to be seen as promoting learning and academic integrity, and not tolerating misconduct (or failure to report misconduct!) by staff, faculty, or students. There must be appropriate staffing and organizational integrity of institutions that promote academic integrity, such as disciplinary boards. There must be support and safeguards for faculty and students who make good-faith accusations of violations of integrity codes.

Companies regularly assess the risks of their operations in compliance with the COSO framework, to ensure their policies are commensurate with their risks, and academic communities should do the same. Table 2 suggests some of the areas that might affect the risk of academic misconduct. Are more permissive admission standards allowing in students whose weaker skills make them feel more pressure to cheat, or whose ignorance of proper academic procedures may lead them to inadvertently plagiarize? How do changes in the staffing of advisement and tutoring offices affect the chances that students will find themselves in trouble in their courses? Are changes in student mix bringing in international students who may have different cultural attitudes, leading to rationalization of improper collaborative work, or who simply don't understand U. S. practices, leading to inadvertent misconduct? Do larger class sizes, or increased uses of online instruction, change the students' perceived opportunity to cheat, or, by reducing their contact with the instructor, affect their rationalization of cheating? Does the increased availability of information on the internet (including paper mills and "braindump" sites) change the risk that papers and projects will provide accurate assessment of student achievement? Does a program of study that forces students to take certain unpopular courses increase the chance that students will rationalize cheating in those courses? How much does a student culture of extensive partying (and its interference with studying) increase the pressure on

⁷ For example, an educator may decide that the benefits of assigning open-ended term papers are great enough to outweigh the risk that students will buy them from on-line sites. A school may decide that the costs of hiring exam proctors exceed the benefits of reduced cheating on exams.

students to cheat? Does an increased reliance on group projects increase the risk that individual effort will be inappropriately graded?

The COSO concept of specific control activities, tailored to risks, has clear academic implications. Table 2 lists a number of relevant control activities. Where risks of misconduct are higher, institutions and faculty should take greater precautions by, for example, increasing proctoring or using computer technology to individualize assignments and examinations. Just as companies use physical controls, such as safes, to protect key documents, so colleges should lock up examination papers before they are administered, and should use appropriate IT techniques to keep databases of student grades safe from unauthorized access.

The COSO framework includes information and communication procedures. Colleges should ensure that their policies are communicated to staff, faculty, and students. Publishing the policies once on the website is probably not enough; printing them in syllabi is an improvement; covering them in person during orientation is a common procedure; and organizing in-class discussions of vignettes is even better. Information about incidents of dishonesty should be sent up the chain of responsibility to appropriate levels.

Finally, the COSO framework calls for companies to monitor how well their control environments, risk assessment processes, control processes, and information and communication systems are working. Colleges should do the same. There should be regular steps taken to assess that the school is actually doing what it means to be doing about academic integrity. Complaints by faculty and students should be monitored. Top officials should regularly review key statistics, such as the number of reported incidents, and average grades.

While the COSO framework is general, and relates to both errors and intentional misdeeds, student errors need to be addressed differently than intentional cheating. (See, for example, Perry (2010) and Bisping, Patron and Roskelly (2008)). The cure to student confusion or ignorance about what is acceptable behavior is education. Faculty can include clear definitions of acceptable and unacceptable behavior in their syllabi, and can use classroom discussions, example of past prior papers, and a variety of aids to educate students on proper procedures. Students can be encouraged to submit drafts of their papers to turnitin.com or other services that will highlight what parts of the student's work is duplicative of others'. Students can be encouraged to ask questions about what is and what is not permissible.

Intentional cheating can best be reduced through a coordinated approach, involving the administration, faculty and students, and addressing all parts of the fraud triangle. Table 3 (Appendix) suggests a wide variety of ways that each of the factors contributing to academic dishonesty, from Table 1, can be addressed. The suggestions here are integrated from a variety proposed in prior literature.⁸ Some of the most significant points are discussed below.

Research indicates that students believe that the most important contributing factor to cheating is the pressure students feel to get good grades, for financial aid or for other reasons. This pressure is exacerbated when the students feel the instructor is too hard or unfair. A variety of factors can help the student avoid reacting to the pressure by cheating. Proper college advisement services can help the student choose the kind of courses that the student can handle, and help the student avoid taking an overload. College tutoring services can help the student gain the confidence that he/she can succeed honestly. A policy of allowing pass-fail courses can reduce grade pressure, as could a policy of giving waivers of financial aid requirements for minor deviations from required grade point average targets. The instructor can make a point of

⁸ Where suggestions have been made by a variety of sources, or seem to be "common sense", no specific attribution is given. An especially useful summary of good practices is Carroll and Appleton (2001).

showing students what they need to do to succeed in the course, and that success is possible with a reasonable amount of effort. For example, an instructor might reduce students' fear of the exams by giving clear guidance online, well in advance, of what materials will be covered on exams, and making prior year exams available. Giving all students access to prior exams also reduces the advantage of students with friends in prior classes, and in effect "designs out" the cheating behavior of finding copies of old exams. Instead, looking at old exams becomes an approved study tool.

The fewer different assessments are used for the grade, the greater the pressure the students will feel on each of them. By using multiple assessments, the professor can reduce the students' fear related to each item. Also, as the course progresses, the student will feel confidence that they know what the instructor wants, which will further reduce perceived pressure.

Another factor contributing to pressure is a lack of time to do the required work. Again, proper advisement and university policies are important in helping students avoid courses, class schedules and work schedules that are too demanding. The instructor can also design the course to be sensitive to students' need to plan their time. Giving students a calendar of assignments and tests before the first day of class, so they can plan their work, may be helpful. Instructor can try to space out due dates of assignments, and try to coordinate exam scheduling with other instructors to avoid overloading students. Where the particular date of a midterm exam is not critical to the course's educational structure, instructors could allow students to vote on the most convenient date. To induce students to start work on projects on a timely basis, instructors can set deadlines for intermediate parts of the project, such as selecting a topic, writing an outline, finding related literature, etc.⁹ Instructors could also give credit, albeit significantly reduced, for late work, as a further way of reducing time pressure on students.

In some classes, the practice of allowing students to bring a single sheet of paper with notes into the exam may be useful. This reduces the students' fear of forgetting some key fact, and has the side benefit of inducing them to think carefully about what they think are the key ideas on which they may be tested. Because they are allowed to bring a sheet with notes into the exam with them, this "designs out" most of the advantage of sneaking in unauthorized aids. A cost of this approach is that students do not actually have to memorize these facts, and thus it is not appropriate in classes where such memorization is an important learning objective.

A large variety of methods can be used to reduce students' perceived opportunity to cheat on exams. Using multiple versions of exams helps prevent copying, as does assigning students to particular seats. Vigilant proctoring by the instructor makes the risk of cheating higher. Institutions can support faculty in this area by providing additional proctors, by allowing use of rooms large enough that students are adequately spaced, and by keeping class sizes small to facilitate monitoring during exams. Importantly, institutions must back up faculty who report cheating.

A side effect of these highly visible steps to deter cheating is that they can help change the culture. Students will no longer believe that "everybody does it", and will not feel they have to cheat to keep up with peers. They will also have an easier time resisting peers' requests for help if they can point to a significant risk of being caught and punished.

In the online environment, students may see an opportunity to have someone else take the test for them, or to collaborate with friends during an exam. A variety of methods are being developed to discourage this practice. One is to use randomized exams, and to enforce strict time

⁹ This also makes it less likely students will have the opportunity to purchase a paper or project online.

limits. There are also a variety of methods being developed to ensure that the right person is actually taking the test, e.g. video monitoring of the student.

Technology has vastly increased students' perceived opportunity to use other people's work on papers and projects. Students can cut and paste material easily from the internet, and they can also buy ready-made or custom-made assignments. See Howell et al. for a discussion of "braindumps", which may contain frequently asked questions and answers, as well as copies of some solutions manuals and test banks.

Technology can also be used to address the problem of cutting and pasting in papers, and to make students wary of being caught. Institutions should make proper tools available to faculty, and should make appropriate policies supporting their use. When students know that their papers must be submitted through products like turnitin.com, they will see less opportunity to plagiarize.

Instructors can combat the problem of purchased papers in a variety of ways. One is to assign specific projects, tailored to the class, and requiring particular types of analysis, or requiring up to the minute information. This means old papers are simply not helpful. Carroll and Appleton (2001) give an example of asking economics students how certain particular theories apply to a situation in a particular country, and then asking the students for their recommendations for the future. A second way is to require students to produce preliminary drafts and outlines at different times during the course. Turnitin.com may also catch some of these papers. A third idea, from Carroll and Appleton, is to "design out" cut and paste plagiarism by making the gathering of information a skill in its own right (since it is likely to be useful in future employment) and rewarding students for their ability to find such information.

Having at least occasional publicity of students being caught and punished for academic integrity violations can affect the perception that cheating is easy, and relatively risk-free. This could be accomplished by publishing, on a no-name basis, the results of hearings on academic dishonesty matters. Faculty could also discuss past actions they have taken when they discovered cheating.

Finally, a full "fraud triangle" approach to deterring academic dishonesty needs to address student rationalizations. This is again best approached jointly by the administration, the faculty, and students. The administration needs to ensure clear standards are set and publicized. Faculty need to clearly explain what is expected, and that they consider the issue important. Students need to "buy in" to the rules.

Students need to reject the idea that "everyone is doing it" and that makes it acceptable. An academic honor code, adopted by students, is one way to address the issue. Similarly, a declaration of policy by the student government would help to make the issue one that students can support. One author has suggested that the education of students on the acceptability of cheating can parallel the efforts being made to discourage binge drinking, by letting non-bingeing students know that in fact many people do not participate or approve of heavy drinking. Some instructors have class discussions, early in the term, of vignettes involving different inappropriate situations, and the class discussion lets students see that many of their fellow students in fact disapprove.

A frequent rationalization is that cheating is all right in reaction to an unfair course burden, or to an unfair instructor. Proper advisement can help ensure students take courses appropriate for their level of preparation, and academic departments should try to ensure their courses are of an appropriate, not excessive rigor. Tutoring should be available when needed to help the students learn. More importantly, the instructor must work to ensure that the course requirements and grading are both fair and seen as fair. The syllabus and instructor should

clearly state course expectations, and the grading methods. Students should be shown that a good grade is available for a reasonable degree of effort and demonstrated ability.

There is tendency by some students to blame the instructor for not keeping them interested in the course, or in not preparing the students adequately for exams. Therefore, since it is the teacher's fault the student is not ready, the student is justified in cheating. While instructors likely not accept this logic, the fact remains that the more relevant and interesting professors make courses, the fewer students who will resort to this logic. Deans and chairs should take seriously student complaints that particular teaching assistants and faculty are incompetent or unfair, and take appropriate steps to protect students.

An important rationalization is that cheating does not matter when the course or assignment itself does not matter to the students' future career. Of course, a threshold question is why the student would be taking such courses. Colleges should carefully consider their program requirements. The student should be advised to take courses that are meaningful. Instructors should make clear the skills that students will need to learn from their courses that will help them in the future, and should not assign "busywork" assignments. Assuming the course and the assignments are important, the students should understand that they hurt their own future prospects by failing to learn the necessary skills. Students do recognize a need to learn as a positive ethical goal, and often disapprove of cheating that circumvents learning (Ashworth and Bannister, 1997).

Instructors are likely to have more success discouraging plagiarism by stressing its inherent dishonesty and its unfairness to other students than its harm to the original author of published work. Both Ashworth and Bannister (1997) and Power (2010) indicate students do not believe that using published work without attribution in a school setting harms the author.¹⁰ In contrast, students do agree there is a moral issue in using plagiarism to gain an advantage over other students in the competition for grades (Ashworth and Bannister, 1997). Most people also recognize that dishonesty to a person they like is wrong, and instructors who can establish rapport with their students can point out that the students are in effect lying to them. Instructors should appeal to students pride in their own schools, and point out that, in the extreme, if cheating were known to be wide-spread, graduate schools and employers would stop trusting the validity of the schools' degrees and transcripts, hurting all the students.

USING THE AUDITING CONCEPTS TO ENCOURAGE POSITIVE ACTIONS

How can schools promote the virtues outlined by the Center of Academic Integrity (1999) of honesty, trust, mutual respect, fairness, and individual responsibility? This paper suggests using the same auditing concepts to encourage good behavior as are used to deter bad behavior. The discussion below organizes many concepts developed in prior work (e.g. McCabe and Pavela, 2004) by the same framework used in the prior section.

¹⁰ Powers (2009) reports that in her discussions with students in a Maine college, many refused to accept the idea that by copying the work of a published author in a student paper, they had in any way hurt that author. The following comment demonstrates this perception:

I can't get over the fact that people get so upset if someone takes a paragraph and uses it for *school*. You know? I think people getting that upset about it is ridiculous. Maybe if they printed it in *The New York Times* and played it off as their own would be a big deal. But playing it off in a small school? I think that's ridiculous. (Beth)

See also Ashworth and Bannister (1997)

In business, internal control frameworks are used not just to reduce the chances of bad things happening, but to maximize the chances of good things happening. In academia, the same COSO concepts discussed above are applicable to organizing institutional efforts to promote virtues. There needs to be an appropriate overall environment, with a tone set by the board and the administration, valuing academic virtues. The organization must carefully assess the internal and external factors that present risks of discouraging these virtues, and must try to establish particular control policies to encourage display of these virtues. Information, communication and monitoring systems will help students and faculty know what is expected, and will help college administrators know the outcome of efforts to promote these virtues.

In the auditing literature, the fraud triangle is mainly used to analyze the risk of bad actions occurring. However, as Table 4 (Appendix) shows, it can be “turned around” to create the conditions that encourage people to act virtuously. For example, if a business wants its employees to donate blood, it can increase incentives/pressures to give, increase opportunity, and give people a rationale for giving. Incentives might include paid extra time off, or recognition of people who gave, or negative social pressure on those who didn’t. Bringing a bloodmobile to the premises and releasing employees from their desks to donate blood increases the opportunity. Having executives make statements about how donating blood is a virtuous act that saves lives provides a rationalization.

A good starting point would be to impress upon students exactly what a college education is supposed to enable a student to do. Students need to recognize the importance of true learning and of acquiring the values and key skills that will help their future lives. It is often effective to have working professionals come talk to students about the values and skills they need to do their work and to keep their colleagues’ and clients’ respect and trust.¹¹

Examples and exercises can show students good research and clear communication. Examples and class discussions can show why providing sources for statements is necessary to make the statements credible, and why developing a reputation for ethics and original thought is important. Faculty can also use class discussion to demonstrate that plagiarized work is often bad work that does not respond appropriately to the issues at hand and therefore why original work is usually better. (Carroll and Appleton (2001) suggest having students mark some of the essays or papers available from online sites, to help learn the difference between good and bad work.) Faculty can use their own work to model appropriate behavior.

If an educational goal is for students to become active learners, faculty need to establish appropriate incentives and pressures. Programs, curricula and courses must be designed to interest students and to be clearly relevant to students’ future plans, so they are motivated to enroll. Course assignments and requirements need to be structured to require students to learn to solve problems creatively, and express their own ideas, at a level of difficulty that is appropriate for the students’ stage of learning. Peer pressure can be harnessed to encourage students to try to excel in projects and contests.

If an institution wants its students to acquire academic virtues, it must provide the student with relevant opportunities. Schools and faculty need to carefully consider the resources they give students, in terms of computer technology, physical facilities, library resources, tutors, and so forth. Faculty availability is a key resource and the possibility of working with faculty on research projects or in small seminars is an example of an opportunity that can be provided to students. In class, faculty give students an opportunity to learn good behavior in part by

¹¹ Invariably, clear communication and analysis skills are near the top of the list, and an ability to work ethically is usually mentioned as well.

modeling it themselves, e.g. by, citing sources and giving appropriate credit (cf. Carroll and Appleton, 2001). Faculty must trust students, and be supportive of their effort (cf. McCabe, Treviño and Butterfield, 2001). Schools also should provide students opportunities to apply their skills to work, through internships or other real-world experiences. Opportunity may also be found in offerings of other schools, whether in the same region or through study abroad programs.

Students entering college want to belong to a community, and are often idealistic. McCabe and Pavela (2004) suggest that students can be convinced that their college sees academic integrity as a core institutional value, and college is the beginning of a commitment to lifetime learning. Following a code of honorable behavior will not only be important in school, but will be important throughout their lives. Demonstrating academic virtues allows the student to become a member of a community that pursues learning in an atmosphere of mutual trust and respect. Students can recognize that such communities depend upon each person acting with integrity and individual responsibility. Another rationale to pursue real learning arises when students recognize that the skills learned in college are important for their future education, their future careers, and for functioning in society.

CONCLUSION

Colleges and faculty can use the concepts taught for preventing and detecting misstatements in financial statements both to reduce academic misconduct in their classrooms and to inform discussions of holistic institutional approaches to the problem. Proper institutional controls, following the COSO pattern, may help minimize both intentional and unintentional academic misconduct. Appropriate guidance for students should minimize those unintentional offenses that result from misunderstanding of the standards for proper academic behavior. Intentional student offenses tend to occur in the presence of some incentive or pressure and some perceived opportunity to cheat, and are usually accompanied by some type of rationalization of the behavior. Therefore, steps taken to address incentives and pressures, opportunities, and rationalizations may all be useful. Some of these steps can be taken by the instructor alone, while others, such as allowing students to take courses on a pass-fail basis, or adoption of a student honor code, are beyond the purview of the individual instructor.

This paper also suggests that the same concepts used to reduce bad conduct can be turned around to promote positive behavior. What incentives and pressures will students respond to? What opportunities should schools give them? What reasons should schools use to convince them? How can schools set up a control structure to promote virtuous academic conduct?

REFERENCES

- Adkins, Joni, Cindy Kenkel, and Chi Lo Lim. 2005. Deterrents to Online Academic Dishonesty. *Journal of Learning in Higher Education*. 1 (1) 17-22.
- Ashworth, Peter and Philip Banister. 1997. Guilty in Whose Eyes? University Students' Perceptions of Cheating and Plagiarism in Academic Work and Assessment. *Studies in Higher Education*; Vol. 22 (2, June): 187-203.
- Bailie, Jeffrey L. and Michael A. Jortberg. (2009) Online Learner Authentication: Verifying the Identity of Online Users. *Journal of Online Learning and Teaching*. 5 (2, June)

- Becker, D'Arcy; Connolly, Janice; Lentz, Paula; Morrison, Joline. 2006. Using the business fraud triangle to predict academic dishonesty among business students. *Academy of Educational Leadership Journal*. (Jan. 1.) 1-18.
- Becker, G. 1968. Crime and punishment: An economic approach. *Journal of Political Economy* 76 (2): 168–217.
- Bisping, Timothy O.; Patron, Hilde; Roskelley, Kenneth. 2008. Modeling Academic Dishonesty: The Role of Student Perceptions and Misconduct Type. *Journal of Economic Education*, 39 (1, Winter): 4-21.
- Bolin, A.U. (2004). Self-control, perceived opportunity, and attitudes as predictors of academic dishonesty. *The Journal of Psychology*, 138(2), 101-114.
- Broeckelman-Post, Melissa A. 2008. Faculty and student classroom influences on academic dishonesty. , *IEEE Transactions on Education*, 2008, pages 1-6.
<http://oak.cats.ohiou.edu/~mb128405/publications/Faculty%20and%20student%20classroom%20influences.pdf> accessed Jan 3, 2011.
- Brown, B. S. & Emmett, D. 2001. Explaining variations in the level of academic dishonesty in studies of college students: Some new evidence. *College Student Journal*, 35(4):529-538.
- Carroll, J. and Appleton, J. 2001. *Plagiarism: A Good Practice Guide*. Oxford: Oxford Brookes University and Joint Information Systems Committee:
http://www.jisc.ac.uk/uploaded_documents/brookes.pdf. accessed January 6, 2011.
- Center for Academic Integrity. 1999. *The Fundamental Values of Academic Integrity*.
<http://www.academicintegrity.org>. accessed January 7, 2011.
- Choo, Freddie and Kim Tan (2008), The effect of fraud triangle factors on students' cheating behaviors, in Anthony H. Catanach Jr and Dorothy Feldmann (ed.) (*Advances in Accounting Education, Volume 9*), Emerald Group Publishing Limited, pp. 205-220
- Cole, Sally and Elizabeth Kiss. 2000. What Can We Do about Student Cheating? *About Campus* (May/June) 5-12
- COSO (Committee of Sponsoring Organizations). 1992. *Internal Control – Integrated Framework*. AICPA. New York.
- Craig, Paul A., Elizabeth Federici, and Marianne A. Buehler. 2010. Instructing Students in Academic Integrity. *Journal of College Science Teaching*. 40 (2, Nov-Dec.): 50-55
- Crown, Deborah F. and M. Shane Spiller. 1998. Learning from the Literature on Collegiate Cheating: A Review of Empirical Research. *Journal of Business Ethics*, 17(6 April), 683-700.
- Devlin, Marcia and Kathleen Gray. (2007) 'In Their Own Words: A Qualitative Study of Reasons Australian University Students Plagiarize', *Higher Education Research and Development* 26 (2): 181–98.
- Davis, Stephen F., Patrick F. Drinan and Tricia Bertram Gallant. 2009. *Cheating in school: What we know and what we can do*. Malden, MA, USA: Wiley Blackwell.
- Gallant, Tricia Bertram, and Patrick Drinan. 2006 Institutionalizing Academic Integrity: Administrator Perceptions and Institutional Actions. *NASPA Journal*, 43 (4):61-81.
- Hayes, David, Kathy Hurtt, and Sarah Bee. 2006. The War on fraud: Reducing Cheating in the Classroom. *Journal of College Teaching & Learning*. 3 (2): 1-12
- Howell, Scott L., Don Sorenson, and Holly Rose Tippets. 2009. The New (and Old) News about Cheating for Distance Educators. *Online Journal of Distance Learning Administration*, Volume XII (III, Fall).

- King, Chula G., Roger W. Guyette, Jr., and Chris Piotrowski. 2009. Online Exams and Cheating: An Empirical Analysis of Business Students' Views .The Journal of Educators Online. 6, (1, January): 1-11
- Louwers, Timothy J., Robert J. Ramsay, David H. Sinason, Jerry R. Strawser, and Jay C. Thibodeau. 2011. Auditing and Assurance Services. McGraw-Hill Irwin. New York.
- Malgwi, Charles A. and Carter C. Rakovski (2009). Combating Academic Fraud: Are Students Reticent About Uncovering the Covert? Journal of Academic Ethics 7 (3).
- Malgwi, Charles A., and C. Rakovski. (2008). Behavioral Implications and Evaluation of Academic Fraud Risk Factors . Journal of Forensic Accounting, IX (1, July-December): 1-37.
- McCabe, Donald L. 1992. The Influence of Situational Ethics on Cheating Among College Students. Sociological Inquiry; 62 (3 Summer): 365-374
- McCabe, Donald L. and Gary Pavela. 2004. Ten [Updated] Principles of Academic Integrity. Change, 36 (3, May/June) :10-14
- McCabe, D. L., L. K. Treviño, and K. D. Butterfield. 2001. Cheating in academic institutions: A decade of research. Ethics and Behavior. 11: 219-232.
- Murdock, Tamera Burton; Angela D. Miller and Amy Goetzinger. 2007. Effects of classroom context on university students' judgments about cheating: Mediating and moderating processes. Social Psychology of Education, 10 (2, June): 141-169.
- Murdock, Tamera B.; Anne S. Beauchamp and Amber M. Hinton.2008. Predictors of cheating and cheating attributions: Does classroom context influence cheating and blame for cheating?. European Journal of Psychology of Education - EJPE (Instituto Superior de Psicologia Aplicada). 23 (4, Dec.): 477-492.
- Park, C. (2003) 'In Other (People's) Words: Plagiarism by University Students – Literature and Lessons', Assessment and Evaluation in Higher Education 28(5): 471–88.
- Perry, Bob. 2010. Exploring academic misconduct: Some insights into student behavior. Active Learning in Higher Education. 11(2) 97–108
- Power, Lori G. 2009. University Students' Perceptions of Plagiarism. The Journal of Higher Education, 80 (6 November/December): 643-662.
- Premeaux, S. R. 2005. Undergraduate Student Perceptions Regarding Cheating: Tier 1 Versus Tier 2 AACSB Accredited Business Schools. Journal of Business Ethics. 62: 407-418
- Rettinger, David A. and Yair Kramer. 2009. Situational and Personal Causes of Student Cheating Research in Higher Education, 50 (3 May): 293-313,
- Robinson, Erin; Rita Amburgey, Eric Swank, and Cynthia Faulkner. 2004. Test Cheating in a Rural College: Studying the Importance of Individual and Situational Factors. College Student Journal, 38 (3 Sept) :380-395,
- Walton, Candace Lynn Thompson. 2010. An Investigation of Academic Dishonesty Among Undergraduates at Kansas State University. Doctoral Dissertation. College of Education, Kansas State University, Manhattan, Kansas.
- Whitley, B. E. (1998). Factors associated with cheating among college students: A review. Research in Higher Education, 39(3), 235-273.

Table 1 – Literature on Causes of Intentional Academic Misconduct Panel A – Incentives and Pressures	
Factor	Study
Pressure to earn good grades for parental expectations, jobs, graduate school, or financial aid	King et al (2009); , Malgwi and Rokovsky (2008); Power (2009); Hayes et al. (2006); McCabe (1992)
Pressure on honors and top students to succeed	Howell et al. (2009);
Student GPA (higher GPA associated with less cheating)	Becker et al (2006)
Class too hard / grading unfair	Becker et al (2006); Robinson et al. (2004)
Not confident about ability to get good grade honestly / fear of failure	Becker et al (2006); Malgwi and Rokovsky (2008); Robinson et al. (2004)
Student lacks proper preparation	Devlin and Gray (2007)
Isolation in on-line courses increases stress	King et al. (2009)
Test anxiety	Whitley (1998)
High stakes of exams, e.g. GMAT	King et al. (2009)
Not enough time to do work	Becker et al (2006); King et al (2009); McCabe (1992)
Procrastinated leaving too little time	Power (2009); Robinson et al. (2004)
Student works too many hours	Becker et al (2006) found not significant
Amount of partying done by students	Becker et al (2006); Premeaux
Social /Peer pressure	Malgwi and Rokovsky (2008); Perry (2010); Rettinger and Kramer (2009); Robinson et al. (2004); McCabe (1992)
Impressing friends/ avoid embarrassment	Malgwi and Rokovsky (2008)
Student age (Higher age associated with less cheating)	Becker et al (2006)
Thrill of “beating the system”	Devlin and Gray (2007)
Performance-motivated students are more likely to cheat than learning-motivated ones	Murdock et al (2007)
This table presents some key motivating factors mentioned in the literature, and some of the papers that have mentioned these factors.	

Table 1 – Literature on Causes of Intentional Academic Misconduct Panel B – Perceived Opportunity	
Factor	Study
Technology allows storing/communicating information	Malgwi and Rokovsky (2008); Howell et al. (2009)
Availability of online resources	Howell et al. (2009)
Students buy copies of answer keys and test banks online	Hayes et al. (2006)
Paper or assignment is general, and similar work is available online	King et al. (2009)
Other students submitted projects of work left in open mailboxes	Carroll and Appleton (2001)
Instructor doesn't deter cheating in exams	Becker et al (2006); Malgwi and Rokovsky (2008); Hayes et al. (2006); Broeckelman-Post (2008)
Instructor doesn't check for plagiarism	Becker et al (2006)
Chance of getting caught small; faculty don't enforce codes	Adkins et al; McCabe and Trevino; Power (2009); Hayes et al. (2006); Robinson et al. (2004)
Other students seen cheating	Becker et al (2006); Robinson et al. (2004)
Ability to have someone else take online tests	Bailie and Jortberg (2009)
Instructor repeats exams/ assignments between terms	Becker et al (2006); Malgwi and Rokovsky (2008); Hayes et al. (2006)
Friend or roommate can provide help	Malgwi and Rokovsky (2008)
Ability to "freeload" on group projects	Carroll and Appleton (2001)

Table 1 – Literature on Causes of Intentional Academic Misconduct Panel C – Rationalizations (Neutralizing Attitudes)	
Factor	Study
“Everyone is doing it”	King et al. (2009); Malgwi and Rokovsky (2008); Rettinger and Kramer (2009); Hayes et al. (2006); Broeckelman-Post (2008)
Friends’ attitudes / Membership in fraternity/sorority	Bolin (2004), Vowel and Chen (2004); Rettinger and Kramer (2009); Robinson et al. (2004)
Grading policies unfair / too hard	Becker et al (2006); Malgwi and Rokovsky (2008); Robinson et al. (2004); Murdock et al (2008)
Workload unfair / not enough time for assignment	Becker et al (2006); Power (2009); McCabe (1992)
Instructor didn’t define cheating or penalties clearly	Becker et al (2006); Bailie and Jortberg (2009) re online test environment; Broeckelman-Post (2008)
Faculty don’t often detect cheating	Becker et al (2006)
Studied hard and deserve to pass	Malgwi and Rokovsky (2008)
Didn’t know act was wrong	Malgwi and Rokovsky (2008); Hayes et al. (2006)
Blame instructor for poor classroom attitude/teaching	Diekoff et al. (1996); Rettinger and Kramer (2009); Robinson et al. (2004); Murdock et al. (2008); McCabe, Treviño and Butterfield
Material being learned not relevant to student goals / busywork	Gehring Nuss and Pavela (1986); Power (2009); Hayes et al. (2006); Hayes et al. (2006)
Instructor doesn’t care	Rettinger and Kramer (2009)
There is no victim	Power (2009); Hayes et al. (2006)
Friends needed help	Hayes et al. (2006); McCabe (1992)

Table 2 – Applying the COSO Framework to Controlling Academic Misconduct	
COSO Framework Element	Academic Application
Control Environment	
Integrity and ethical values	Institutional policies on academic values and what constitutes misconduct by administrators, faculty or students. Student government position on academic integrity.
Board of directors involvement	Clear Board of Trustees interest in promoting ethical practices, supporting enforcement of standards, and not tolerating unethical practices by faculty, administration or students. Clear definition of organizational goals, populations it means to serve, and related admission standards and quality expectations.
Management’s philosophy and operating style	Support for education as a positive good. Support for faculty enforcement of rules. Engaging students and others in defining standards to gain their acceptance. Perceived emphasis on fairness. Avoiding growth that compromises academic quality / appropriate admissions standards.
Organizational structure supporting effective control	Proper support for such functions as admissions, tutoring, libraries, and other support facilities. Clear lines of reporting and responsibility for dealing with ethics complaints .
Competent personnel for the functions	Appropriate training of faculty and administrators. Establishing group with special expertise in dealing with misconduct issues.
Anonymous hotlines for reporting problems	Procedures for students to report problems.
Appropriate responsibility and authority assigned	Clearly delineate roles of faculty, administrators, and special tribunals with regard to academic integrity.
Human resources policies designed to facilitate control	Policies to safeguard faculty or students who report academic violations.
Risk Assessment	
Take steps to identify risks to control, identify their significance, and consider how to manage the risks	Alertness to how changes in the following, among others, affect the risks of misconduct: - admission standards - percentage of international students - student life issues, e.g. “partying” - technology available to students -class size

	<ul style="list-style-type: none"> - use of adjuncts or teaching assistants - disciplinary procedures - online classes - assessments on collaborative projects or homework, rather than in-class exams
<u>Control activities</u>	
Integrate control activities with risk assessment	<p>Vary the level of safeguards based on perceived risk. For example, provide additional proctors to large classes.</p> <p>Use appropriate specific controls when administering exams</p>
Separation of duties between incompatible functions	<p>Separate the grading and disciplinary roles, where possible.</p> <p>Make an appeals process available.</p> <p>Do not let student aides help safeguard exams before they are delivered.</p>
Physical controls over key assets	<p>Safeguard exams before they are administered</p> <p>Don't reuse exams or assignments</p> <p>Proper IT controls to keep students from hacking into grade databases.</p> <p>Recognize that some test banks and answer keys may be available to students online</p> <p>Secure methods for students to submit assignments, to prevent others from copying</p>
Computer processing to reduce errors and increase deterrence	<p>Use systems like turnitin.com to help catch plagiarism.</p> <p>Use appropriate technology to customize homework or exams where appropriate</p> <p>Use available techniques to monitor identity of students taking online exams</p>
<u>Information and communication</u>	
Communication of policies to those expected to follow them	<p>Publication of policies in university bulletins to students</p> <p>Training of faculty and staff in university policies, and transmission of policies to them.</p> <p>Publication of policies in course syllabi</p> <p>In-class discussion of illustrative vignettes dealing with integrity</p>

	<p>On-line illustrations of applications of policies.</p> <p>Reporting of actions of disciplinary committees</p>
Controls over the accuracy of transmission of information within the organization	<p>Policies for reporting of incidents of dishonesty</p> <p>Secure systems for submission of grades</p>
Prompt transmission of information to management about performance	<p>Policies for reporting incidents of misconduct</p> <p>Policies for letting students and faculty know the outcome of hearings on allegations.</p>
Monitoring	
Ongoing evaluations of controls	Provost-level ongoing evaluations
Procedures to report control deficiencies	Reporting of violations
Analysis of key operating metrics	Analysis of admission standards, student grades, reported violations, etc.
Follow-up on employee and customer complaints	Follow-up on student allegations
The elements of the COSO framework have been excerpted from those discussed in Louwers et al., 2011.	

Factor	Possible Approach
Pressure to earn good grade for parental expectations, jobs, graduate school, or financial aid	Allow some pass-fail grading Advisement and tutoring services Penalties for misconduct, including parental notification (Malgwi and Rakovski, 2009) Other ways for students to impress Make financial aid standards less rigid / allow pass-fail courses
Pressure on honors and top students to succeed	Clear grading standards Multiple assessments Higher penalties for misconduct
Class too hard / grading unfair	Advisement and tutoring Explain grading Avoid excessive demands Multiple assessments For international students, English skills. Use criterion-referenced, rather than norm-referenced, grading (Whitley, 1998) Allowing students credit for redoing work (Whitley, 1998)
Not confident about ability to get good grade honestly / fear of failure	Clear expectations of exam and assignments Tutoring and advisement Allow reasonable amount of notes on exams
Student lacks proper preparation	Better admission standards (Devlin and Gray, 2007) Advisement and tutoring
Isolation in on-line courses increases stress	Promote student interaction. Make tutoring and help available.
Test anxiety	Clear description of requirements Practice tests Tutoring or treatment of test anxiety Multiple assessments
High stakes of exams, e.g. GMAT	Within classes, use multiple assessments. Make the exam expectations clear in advance
Not enough time to do work	Require early submission of outlines and topics
Procrastinated leaving too little time	Require early submission of outlines and topics Allow late work with only moderate penalty
Student works too many hours	Advisement Accept some late work Early announcement of deadlines
Amount of partying done by students	Education of students, similar to programs on drinking; Campus-wide efforts to reduce binge drinking Providing access to quiet study areas

Social /Peer pressure	Education of students Student honor code
Impressing friends/ avoid embarrassment	Clear grading standards / reasonable expectations.
Student age (age = less cheating)	Education of students
Thrill of “beating the system”	Better rapport with instructor;
Performance-motivated students are more likely to cheat than learning-motivated ones	Focus class on true learning
Note: The possible solutions include those proposed by prior literature as well as the author. Since many of the solutions seem to be “common sense”, such as proctoring exams, sources are only given for ideas that seem original or uncommon.	



Table 3 – Possible Methods of Deterring Intentional Academic Misconduct Panel B – Reducing Perceived Opportunity	
Factor	Possible Approach
Technology allows storing/communicating information	<p>Forbid /limit electronic devices</p> <p>Timed online exams</p> <p>Allow a reasonable amount of notes in exams</p> <p>Requiring tests to be taken on “cheat-resistant” laptops in a secure location (Howell et al., 2009)</p>
Availability of online resources to plagiarize	<p>Use turnitin.com or similar services.</p> <p>Require electronic submission of papers to facilitate detection of plagiarism.</p> <p>Assigning students numerous writing assignments, so professor can compare writing style across assignments. (Adkins et al. 2005)</p> <p>Change nature of assignments so students are rewarded for information-gathering skills</p> <p>Asking for in-class essay reflecting on how the project was written. (Carroll and Appleton 2001)</p>
Students buy copies of answer keys and test banks online	<p>Use more original test and assignment questions</p> <p>Use more essay and analytical questions</p>
Paper or assignment is general, and similar work is available online	<p>Tailor assignments to specific course</p> <p>Require students to submit drafts</p>
Other students’ submitted work left in open mailboxes	<p>Provide secure way of submission of work</p>
Instructor doesn’t deter cheating in exams	<p>Clear instructor policy</p> <p>Active proctoring</p> <p>Limit class sizes to facilitate proctoring (Becker et al. 2006)</p> <p>Proctoring assistance to instructor</p> <p>Use of multiple versions of exams</p> <p>Assigned seating in exams, possibly with students with lower grades seated near front (Hayes et al. 2006)</p> <p>Adequate classroom size and conditions</p>
Instructor doesn’t check for plagiarism	<p>Tell students you check.</p> <p>Use turnitin.com or similar services.</p> <p>Examining submitted Excel spreadsheets for common “properties”</p>
Chance of getting caught small; faculty don’t enforce codes	<p>Publicize incidents and penalties</p> <p>Require faculty to report plagiarism</p>

	Support faculty who report plagiarism Anonymous tip lines (Malgwi and Rakovski (2009))
Other students seen cheating	Active proctoring Use of multiple versions of exams, including, at the extreme, individually made computerized exams
Ability to have someone else take online tests	Timed exams Monitored proctored exams Advanced identity verification procedures, including biometrics, challenge questions, and video monitoring (Bailie and Jortberg, 2009)
Instructor repeats exams/ assignments between terms	Do not repeat exams. Make past exams and assignments available
Friend or roommate can provide help	Provide entire class with past exams and assignments. Clarify standards for consultation on homework
Ability to “freeload” on group projects	Require analysis of group process (Carroll and Appleton, 2001) Have group create evidence of work in process to let instructor see who did what (Carroll and Appleton, 2001)

Table 3 – Possible Methods of Detering Intentional Academic Misconduct Panel C – Challenging Rationalizations	
Factor	Possible Approach
“Everyone is doing it”	Education of students Student honor codes Instructor attitude Point out impact on curve and other students
Friends’ attitudes / Membership in fraternity/sorority	Education of students Student honor codes Instructor attitude
Grading policies unfair / too hard	Clear grading. Allow students chance to show mastery by end of course, where applicable
Workload unfair / not enough time for assignment	Reasonable workload Show how most of class manages to do it Allow extensions with moderate penalty
Instructor didn’t define cheating or penalties clearly	Clear definitions and examples Possible separate tutorial on acceptable practices Clear specification of what aid is acceptable in at-home or online tests (King et al, 2009) Allowing students to use turnitin.com on their work in advance of actual submission, so they can address potential problems.
Didn’t know act was wrong	Education on acceptable behavior; Define unacceptable behavior in the course syllabus Have classroom discussion on types of unacceptable behavior Online tutorials on acceptable behavior (Craig et al. 2010)
Faculty don’t often detect cheating	Publicize fact that cheating is often detected, and the consequences.
Studied hard and deserve to pass	Fair grading, and clear expectations
Blame instructor for poor classroom attitude/teaching	Establish rapport Focus on learning behaviors Replace or retrain incompetent or apathetic teaching assistants or faculty (McCabe, Treviño and Butterfield 2001)
Material being learned not relevant to student goals / busywork	Plan curriculum carefully Integrate tasks --skills from projects and homework needed for exams and other assessments (Hayes et al. 2006, Carroll and Appleton 2001) Advisement of students Avoid busywork

	<p>Point out relevance to later courses or jobs (Becker et al 2006)</p> <p>Stress the importance of learned behavior, e.g. good writing skills beyond the importance of grades (Becker et al.)</p>
Instructor doesn't care	<p>Convey importance of ethical behavior</p> <p>Require instructors to report incidents</p> <p>Administrative statements and support of faculty</p>
There is no victim	Educate students on impact on other students
Friends needed help	Instill fear of consequences to student of being caught.



Table 4 – Using the Fraud Triangle to Promote Values of Honesty, Trust, Respect, Fairness and Individual Responsibility

Incentives/ pressures

Peer pressure for honesty through an honor code
Perceived rewards for creative and original work
Creating interesting courses and assignments
Demonstration of importance of academic skills to future employers and graduate schools
Demonstration of importance of key values to future employers
Demonstration of importance of particular assignments within a course to later assessments, projects, or courses
Administrative stress of pride of organization in its reputation for academic integrity

Opportunities

Clear explanations of desired behavior by administration and faculty, in university policies, in syllabi, and in class materials and demonstrations
Unproctored exams to demonstrate trustworthiness
In-class opportunities to demonstrate true knowledge, e.g. debates or presentations
Original and creative projects
Courses oriented towards student interests
Small classes allowing personal interaction with faculty
Faculty or older peers acting as role models of proper academic behavior
Input into grading methods and timing of assignments and assessments.
Availability of advisement on ethical and academic matters
Encourage /subsidize / publicize student participation in contests and other activities requiring demonstration of academic skills and creativity
Give adequate computer, library, and classroom facilities to facilitate learning
Give adequate quiet study space to allow student meetings and study
Support student research projects
Provide internship opportunities that give students chances to learn and display skills

Rationalizations

Rapport with instructor increases desire for honesty and mutual trust
Respect for fairness of requirements increases feeling of responsibility to meet them
Peers expect to be able to rely on their fellow students' honesty
Fair grading is only possible when all students follow the rules.
Student honesty makes it easier for faculty to trust them and deal with them respectfully.
