

Supporting Academic Honesty in Online Courses

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Abstract

Ensuring academic honesty is a challenge for traditional classrooms, but more so for online courses where technology use is axiomatic to learning and instruction. With the Higher Education Opportunity Act of 2008 (HEOA) requirement that online course providers reduce opportunities to cheat and verify student identity, all involved with course delivery must be informed about and involved in issues related to academic dishonesty. This article examines why students cheat and plagiarize, types of dishonesty in online courses, strategies to minimize violations and institutional strategies that have proven to be successful.

Keywords: Online Learning, Academic Honesty, Plagiarism Detection, Higher Education

Introduction

While academic dishonesty is a priority for all educational environments, it is particularly of concern in courses offered at a distance where students work independently and with less direct monitoring of their actions by an instructor. For those institutions offering programs via distance learning, academic dishonesty can be a high stakes issue as requirements to provide assurances of integrity and student identity become more rigorous, as noted below. In its Policy Statements on Distance Education, SACS requires that “the integrity of student work and the credibility of degrees and credits are ensured” (SACS: CS 3.4.6 and CS 3.4.10 2008). In order to maintain their accreditation (or be reaffirmed), universities must demonstrate they have processes in place that will reduce opportunities for students to cheat. The Higher Education Opportunity Act of 2008 (HEOA) states

...the agency or association requires an institution that offers distance education or correspondence education to have processes through which the institution establishes that the student who registers in a distance education or correspondence education course or program is the same student who participates in and completes the program and receives the academic credit. (HEOA: Issue 10 2009)

Increased requirements for accountability provide an opportunity for designers of online courses to build in strategies that can address concerns for all forms of academic dishonesty. Gallant (2008) describes five categories of academic dishonesty, stating that these “terms transcend group boundaries and roles” (p. 10):

1. “Plagiarism—using another’s words or ideas without appropriate attribution or without following citation conventions;
2. Fabrication—making up data, results, information, or numbers, and recording and reporting them;
3. Falsification—manipulating research, data, or results to inaccurately portray information in reports (research, financial, or other) or academic assignments;
4. Misrepresentation—falsely representing oneself, efforts, or abilities; and,
5. Misbehavior—acting in ways that are not overtly misconduct but are counter to prevailing behavioral expectations.” (p. 10)

Literature Review

While there is a perception that more academic dishonesty occurs in online environments, there is little evidence to support that this is the case. Online courses that are technology dependent appear to remove barriers of instructor observation and therefore supposedly increase the opportunity to cheat (Calluzzon & Cante, 2004; Etter, Cramer, & Finn, 2006; Faucher & Caves, 2009; Frost, Hamlin, & Barczyk, 2007; Granitz & Loewry, 2007). It may be true that technologies provide more

opportunities to cheat. *Turnitin*™, a company that provided plagiarism detection software, found that many online tools are used as sources (2011).

- About one-third of plagiarized material can be traced to social networking sites and frequently asked questions services.
- Approximately 15% of material that is plagiarized is associated with services that promote and provide ways to plagiarize and cheat.
- The most commonly used source for plagiarized material is Wikipedia™.

Some reports indicate that students and faculty members tend to *believe* that academic dishonesty, cheating in particular, is more likely in online environments (Dietz-Uhler, 2011; Hancock, 2011; Watson & Sottile, 2010). However others indicate that there is *no difference* based on environment (McKnabb & Olmstead, 2009; Spaulding, 2009) and that students perceive there is *less* cheating in online environments (Greaser, Black & Dawson, 2008). While there is little agreement on where most cheating occurs (in the classroom or online), there is some evidence that *less cheating* occurs online than in face-to-face courses (Stuber-McEwen, Wisel, & Hoggatt, 2009; Watson & Sottile, 2010; Wisely, & Hoggatt, 2009). It is important to note that much research about cheating in general is based on self-reports of cheating or student perceptions of academic dishonesty. It is difficult to capture comprehensive rates of cheating in either environment (Spaulding, 2009).

Of the forms of academic dishonesty, plagiarism has historically been noted as the most likely to occur in online courses due to the ease of copying and pasting from primary or direct sources (such as published articles). However, allowing others to complete coursework is of growing concern. Strategies for identity authentication are increasing as technological developments necessitate knowing who is making the clicks in online interactions. The challenge can be illustrated in the trend of open courses provided by organizations offering courses to non-institutional learners at no cost or

institutional credit. *Coresera* - who at the time this article was providing free courses offered through 17 institutions of higher education – must deal with both plagiarism and online identify of students taking the massively open online courses (MOOCs) (Young, 2012).

Where exactly does the problem reside? By many accounts problems reside at the course level, as institutions typically have policies in place and there can be a disconnect between institutional policy and course-level enforcement. The United States Government Accountability Office (GOA) conducted an undercover investigation (enrolling fictitious students) in 15 for-profit online program providers to determine what, if any, policy areas were being violated, including academic dishonesty (Hillman, 2011). While eight of the 15 institutions complied with established polices, six did not deal with academic dishonesty according to established policies. In two colleges, instructors repeatedly told the student they were cheating but did not take action. In four other colleges, one or more instructors did not penalize or acknowledge substandard work, including plagiarism. The persistence if not growth of academic dishonesty has become big business, working at odds with efforts of institutions to defray and control incidences. Most common are services that will complete assignments for students for a fee. While these services are available to any student, there is no data to suggest that online students use them more frequently than do campus-bound students.

This paper examines the nature of online academic dishonesty and strategies to lessen incidences based on proven practices. It does not address general best practices of assessment, many of which are applicable to both face-to-face and online environments, particularly those regarding objective assessments. The author takes the position that if instructors and designers construct courses strategically, they can promote a culture of ethical behavior while making cheating and plagiarism unattractive, difficult to achieve, and apparent to the student. The following questions are answered to best inform instructors, instructional designers, and curriculum developers throughout the process

of design as well as through implementation of an online course.

- *What are the reasons students engage in academic dishonesty in general?*
- *What types of academic dishonesty occur in online courses?*
- *What strategies can decrease incidences of academic dishonesty in online courses?*
- *How can institutions reduce rates of academic dishonesty in online learning environments?*

Reasons Students Engage in Academic Dishonesty

In general students cheat for a variety of reasons. Chiesl (2009) identified several common reasons that students cheat, in general, across educational settings. These include: fear of failure, desire for better grades, pressure from parents to do well, unclear instructional objectives, “everyone else is doing it” (p. 329), “there is little chance of being caught” (p. 329) and “there is no punishment if I get caught” (p. 329). Faucher and Caves (2009) identify a variety of reasons that students cheat including the pressure to succeed indicated by high grades (Simkin & McLeod, 2010), getting away with something, lack of organizational skills, and fear of failing a course (loss of time and money). Dee and Jacob (2010) believe that students have a poor understanding of academy dishonesty and therefore they are either ignorant that they are being dishonest or they don’t value the reason for being honest. Whether motivation to succeed, peer standards of behavior, or ignorance are the reasons, there is convincing evidence that most students have cheated in their university experience, however they may not understand that what they have done is actually unethical (McCabe, Butterfield, & Trevino, 2012).

There is a commonly reported perception that students cheat on assessments in online learning because it is not clear what constitutes cheating or expectations are not clear due to the delivery mode itself (Dee & Jacob, 2010; McCabe, Butterfield, & Trevino, 2012). However, LoSchiavo and Shatz (2011) report that while three-quarters of students in their study sample reported cheating on online

quizzes, when honor codes were clearly articulated this number decreased significantly. Thus how expectations are presented may impact rates of dishonesty. Additionally, dishonesty may have roots in the student. There is evidence that students who cheat on tests are self-deceptive in other areas of their lives (Chance, Norton, Gino, & Arlely, 2010). In online environments it may be difficult if not impossible for instructors to determine or appraise student disposition. Thus understanding students and being proactive in the design and implementation of an online course may impact student behavior.

Types of Academic Dishonesty in Online Courses

Webster's Online Dictionary defines academic dishonesty as the "intentional participation in deceptive practices regarding one's academic work or the work of another" (Webster, 2000, p. 4). "eCheating" (Rogers, 2006) takes several forms and in general replicates those forms of academic dishonesty in the class in the online environment. Five forms of academic dishonesty are evident in online courses: collusion, deception, plagiarism, technology manipulation, and misrepresentation.

Collusion

Aiding and abetting appears to be the most frequent choice of students for both online and classroom cheating (Stuber-McEwen, Wisely, & Hoggatt, 2009). In this case, academic dishonesty is consensual and most likely planned in advance. Such strategies take several forms and require preparation on the part of the student including:

- Organized cheating. Students give forethought to the process of cheating and in an online course this requires knowing other students and understanding who is most likely to cheat. In an online environment students may find ways to copy answers from another student with their permission, through the use of technology (Dietz-Uhler, 2011), and plan in advance to help someone else cheat on a test, without benefitting personally (Dietz-Uhler, 2011).

Howell, Sorenson, & Tippets (2009) report students using threats, manipulation, and payments to coerce other students into cheating.

- Exchanging information. In an online course, technology is the most commonly used strategy to share answers and work, although in a test-taking situation students may be able to be physically located in the same location as they work through assessments. As in face-to-face classes, students may print copies of an assessment to share with others via scan or image (Dee & Jacob, 2010; Sileo & Sileo, 2010). More technology savvy students may use mobile phones and iPods to record answers notes, text, and take photos of exam and then send to peers (Howell, Sorenson, & Tippets, 2009). Students may also use wireless earpieces to communicate with each other (Howell, Sorenson, & Tippets, 2009) as well as send instant messages (Dee & Jacob, 2010; Rogers, 2006) or email during an exam (Sileo & Sileo, 2008).

Collusion requires that students know each other, or find a likely conspirator through course activities suggesting that to limit this type of cheating, social interaction should be limited. However interaction and social presence is associated with learner satisfaction and learning (Swan, 2004), thus an obvious solution may result in lower academic performance.

Deception

Deception differs from collusion in that it is not consensual either between students or with the instructor in that a student breaks an agreed upon agreement about what can be used to complete course assignments or assessments. While all instances of academic dishonesty are deceptive, the key to this type of dishonesty is that an individual takes an action alone without collusion or permission. Deception can include copying from another student without their permission (Dietz-Uhler, 2011), using private instructor or peer notes - possibly from previous semesters- (Dietz-Uhler, 2011), and getting assistance during the assessment without permission (Rowe, 2004) possibly from someone not in the class. Tutelage by those not enrolled in the class has become big business as indicated by

services that instruct students about how to cheat and not get caught (Howell, Sorenson, & Tippens, 2009).

Plagiarism

Plagiarism involves copying material almost word for word from any source and turning it in as your own work (Dietz-Uhler, 2011). The copy and paste culture of the Internet makes it easy and appealing to take shortcuts in one's writing. Most online courses are primarily text-based and this may contribute to academic dishonesty in general (offering less social presence of class members) and plagiarism in particular due to the focus on text thus limiting different ways to participate and demonstrate learning (Holden & Westfall, 2010).

Students plagiarize in different ways for different purposes. Searching the Internet while taking a test can utilize thoughts and answers from the work of published authors that are then used to represent the test taker's knowledge (Rogers, 2006). Making up or manipulating a reference list (Dietz-Uhler, 2011) may go hand in hand with copying sentences directly from an online source without citing or indicating a direct quotation (Dietz-Uhler, 2011). Submitting work completed by someone else from a previous semester (Dietz-Uhler, 2011) may be facilitated in online courses due the digital nature of assignments that are stored online and on hard drives. Ease of plagiarizing may not necessarily be easier in an online course, but it may be less visible to classmates and the instructor.

Technology Manipulation

Using technology to deceive or share information differs from using technology to manipulate opportunities or instructor oversight of student actions. Such strategies range from simple to sophisticated. It may be that course management systems and Internet connectivity failures are "the-dog-ate-my-homework" excuse for the 21st century. Technology can facilitate dishonesty as well as record actions that can provide evidence of misdeeds. Students who have grown up problem solving

with technology may find opportunities to bypass laborious course tasks and assignments.

Be they on campus or online, students quickly learn that technology interruptions can provide acceptable excuses for not turning an assignment in on time or getting permission to re-do an assignment or assessment. Students may intentionally break or crash an Internet connection in order to re-take an assessment (Rowe, 2004). Depending on the system being used there may exist other loopholes to retake an assessment without instructor permission or knowledge (Rowe, 2004). Technically savvy students may be able to figure out how to access pre-set answers (such as those associated with automatically graded objective tests) or how to see what other students are doing in their own work, such as accessing files submitted into an assignment area (Howell, Sorenson, & Tippins, 2009; Rogers, 2006; Rowe, 2004). As systems developers make progress in providing secure systems such tactics may subside. However, it may be that student's motivation to be dishonest heightens efforts to beat a system.

Misrepresentation

Misrepresentation of identity is a persistent challenge in online courses, both open courses offered for non-credit and those taken for credit. While students pay tuition and fees to learn and earn credit toward a certification or degree, the temptation of falsifying identity is appealing when time and effort are demanded.

Strategies for misrepresentation occur in two main forms. First, students purchase papers or projects written by an individual or a service (Sileo & Sileo, 2008) such as *Wetakeyourclass*TM (<http://www.wetakeyourclass.com>), *Boostmygrades*TM (<http://boostmygrades.com>), and *Unemployed Professors*TM (<http://www.unemployedprofessors.com/index.php>). Given the expense of college tuition and the cost of paying for college assignments to be written, it does not seem feasible that

students could afford such services, and yet they appear to flourish. A second strategy that is facilitated by an online environment is work for hire: a student pays someone else to take a course for them or to participate in some capacity during the course (Bailie & Jortberg, 2009; Shafer, Barta, & Pavone, 2009; Smith & Noviello, 2012). This is a greater financial investment and distances the student from the course experience, and evidence of their mastery over course content.

The aforementioned strategies commonly used in online courses are frequent enough to warrant preventative tactics at different institutional levels, first at the course level as monitored by the instructor and second at the institutional level where policy is broadly applied to the student's college experience.

Strategies that Decrease Academic Dishonesty

Strategies to prevent academic dishonesty relate in part to the offense (plagiarism, false identity, cheating), institutional policies, and configurations of technology. However, many tactics are accessible to the course instructor as they design the course, and during implementation of the course.

Make Academic Integrity Expectations Clear

Communicating the priority of academic honesty in online courses is a proven strategy to reduce misconduct. In those institutions that include school honor codes, students report far less cheating than did students at schools without honor codes (Gibson, Blackwell, Greenwood, Mobley, & Blackwell, 2006). Defining academic dishonesty and providing a clear policy in the syllabus and in other locations in the course (such as attached to assignments or in presentations) communicates a clear message to students the importance of ethical behavior as well as the consequences of dishonesty (Gibson, Blackwell, Greenwood, Mobley, & Blackwell, 2006 ; Harmon, Lambrinos, & Buffolino, 2010; Krask, 2007; Howell, Sorensen, & Tippets, 2009; Sileo & Sileo, 2008; Trenholm,

2006/2007). Articulating and reminding students of consequences (Gibson, Blackwell, Greenwood, Mobley, & Blackwell, 2006) provides just-in-time cognitive cues that students not only will find hard to ignore but also provide documentation that students are informed and cannot plead ignorance.

Requiring tutorials or orientations also educates students in areas of academic dishonesty that might be unfamiliar to them or confusing (Dee, 2010). Such overviews may be part of a required course or offered as a pre-requisite or supplement to an online course. For example, Penn State offers *iStudy* modules (<http://istudy.psu.edu/access.html>) that orient students to expectations. The University of Texas at Austin provides an open tutorial, *All about Plagiarism*

(<http://www.lib.utexas.edu/services/instruction/learningmodules/plagiarism/>), that provides examples and rationales for various types of plagiarism, as well as expectations of academic behavior.

Construct Valid Assessments and Delivery with Foresight

Much of the focus in the reviewed literature is on *how to construct* a test and *how to implement* a test to minimize cheating. Because much of the recommendations in this area apply to any assessment used in any environment, only those suggestions that apply specifically to online environments are presented.

Shank (2012) notes that there are several mistakes made when constructing online assessments. First, selecting an inappropriate type of assessment for what is being assessed opens the door for invalid assessments as well as ones that may not align with instructional objectives. Objective tests are commonly relied upon in online courses as they are easy to automate, administer, and reuse. However when test items are limited to one correct answer they can only assess (at least measure very accurately) lower levels of Bloom's Taxonomy (Anderson & Krathwohl, 2001) and thus more likely to make cheating more appealing. When more open-ended assessments are integrated students

have to work at higher levels of thinking, understand that there is more than one correct answer, and must represent their subsequent deeper learning. Essays and performance assessments that require students to use unique information and reasoning are more engaging and harder to fabricate (Osika, 2012). Shank (2012) also notes that moving to an online format, tests that work in a classroom may lose validity. Because materials, resources, and presentation of content differ in these two contexts, how students interact with content and make decisions also changes. Additionally, many assessments rely heavily on multiple choice items which focus on lower levels of memorized content which make it tempting if not easy for online students to find answers (or share them) without learning them. Answers that are only a “*Google*™” away are appealing and possibly not within a student’s definition of unethical behavior.

Specific suggestions for offering appropriate and effective online assessments that decrease cheating offer either alternatives to traditional test formats or tactics that are part of the assessment construction. Alternative assessment strategies include:

- Administering random quizzes or tests using social media tools (Sileo & Sileo, 2008) such as text messages.
- Designing test items that allow the student to use their text so they are less tempted to search the Internet for the correct answer (2007). Open book assessments operate at higher level of Bloom’s and must require supporting evidence, arguments, or reasoning.
- Allowing multiple attempts, perhaps with highest score recorded, so that students learn from the assessment (Krsak, 2007). With each attempt items may be re-ordered or replaced with other items to reduce opportunities to cheat.

The focus on objective tests in online courses may be a reason for cheating, particularly when offered as the sole or primary assessment strategy. Tactics reported to lower incidence of cheating in online tests and quizzes include:

- Design questions that build on prior course work, requiring knowledge that has already been covered and assessed (Krsak, 2007).
- Use one-correct answer items (such as true/false, matching and multiple choice) for ungraded or low stakes assessment as a form of practice (2007).
- Use rote-memory questions for gauging the pace of the course and identifying students who are lost rather than measuring mastery over content (2007).
- Present items one at a time rather all at once so they cannot be printed or shared with others (Cluskey, Ehlen, & Raiborn, 2011).
- Offer more frequent and shorter quizzes so that it is more challenging for students to collude to get just-in-time help (Krsak, 2007).
- Randomize answer choices on single answer items, if possible (Cluskey, Ehlen, & Raiborn, 2011; Krsak, 2007).
- If tests require calculations, provide students different number sets (Krsak, 2007).
- Make an attempt to change at least one-third of items every semester so the entire test cannot be easily shared (Cluskey, Ehlen, & Raiborn, 2011).

Implementation of assessments can open opportunities for cheating, and these can be avoided with preparation. The following recommendations may not work for every course or every discipline but they do provide some basic strategies for setting up an automatic quiz or test.

- Make tests available the day it is offered, no earlier, setting specific and time-based periods for taking the test (Cluskey, Ehlen, & Raiborn, 2011; Krsak, 2007).

- If possible, offer different versions of a test so that students take different versions (Krsak, 2007). This can be accomplished using test item banks and setting up two or three versions per assessment that then can be released to different pre-determined groups of students.
- Check both start and submission times so that assessment duration can be monitored (2007). Monitoring can indicate possible cheating or document forced technology interruptions.
- Routinely compare student answers (2007).
- Assign a password to assessments and send just prior to test release (2007). If using multiple tests, each test group should have a different password.
- Set a time limit for completion (Cluskey, Ehlen, & Raiborn, 2011; Krsak, 2007). This may limit the time the test can be completed or the time period that the test is available to students. It is important to consider that some students may require more time to complete an assessment. Students for whom English is not their first language and students with some disabilities may require more time.

It may be that the perceived isolation that can be present in an online course, indicated by less faculty oversight and social presence of all class members, contributes to student lack of awareness of their progress or achievement as the course progresses. Utilizing informal and ungraded assessments, such as Classroom Assessment Techniques (CATs) modified for online courses may reduce uncertainty and boost confidence.

Table #1
Classroom Assessment Techniques for Online Courses (modified from Angelo & Cross, n.d.)

CAT	Online Application	Tools
Background Knowledge Probe: short, simple questionnaires prepared by instructors for use at the beginning of a course or at the start of new units or topics; can serve as a pretest. (Angelo & Cross, n.d., p. 1)	Survey or Poll Chat Text or Instant Message	Poll Everywhere™ PollDaddy™ Google™ Poll
Focused Listing: focuses students' attention on a single important term,	Lecturecasts w/ student comments	Podcasting-Odeo™ Podbean™

name, or concept from a lesson or class session and directs students to list ideas related to the “focus.” (Angelo & Cross, n.d., p. 1)	Shared note taking	Note-taking: Evernote™ Google Docs™ Notemesh™ Voicethread™
Misconception/Preconception Check: focus is on uncovering prior knowledge or beliefs that hinder or block new learning; can be designed to uncover incorrect or incomplete knowledge, attitudes, or values. (Angelo & Cross, n.d., p. 1)	Discussion Chat Text/Online Polling	Vyew™ YackPack™ Gabbly™
Empty Outlines: in a limited amount of time students complete an empty or partially completed outline of an in-class presentation or homework assignment. (Angelo & Cross, n.d., p. 1)	Shared Note Taking Concept Mapping	Bubblus™ Mind42™ Mindomo™ Wordle™
Memory Matrix: students complete a table about course content in which row and column headings are complete but cells are empty. (Angelo & Cross, n.d., p. 1)	Collaborative writing Concept Mapping	Google Docs/ Spreadsheet™
Muddiest Point: considered my many as the simplest CAT; students respond to 1 question (What was the muddiest point in _____ ?). (Angelo & Cross, n.d., p. 1)	Anonymous Discussion Survey or Poll	CMS quiz or poll Poll Everywhere™

Low stakes assessments are less likely to trigger cheating yet can provide valuable input about student progress. Because they are smaller in scope and do not threaten student grades, they can create a culture that values assessment.

Make the Most of the Technology

While technology may provide more opportunities for academic dishonesty, it can also provide ways to monitor and control those opportunities. Some institutions that provide student laptops set them up to restrict opportunities to cheat (Howell, Sorenson, & Tippets, 2009). Given the many ways students can now access online course materials through multiple devices, other strategies may be easier to implement.

Computer-adaptive testing and randomized testing offered through textbook publishers or assessment companies can remove the burden of oversight from the individual instructor (Howell, Sorenson, & Tippets, 2009). There is also assurance that assessments align with the course content and of higher quality. Third party services are thought to less susceptible to cheating, although collusion is still possible.

Controlling Internet access of the online student is a proven way to prevent searches and browser-based collaborations. Software that will not allow the student to have more than one browser window open at a time has proven to reduce cheating, particularly on timed tests (Cluskey, Ehlen, & Raiborn, 2011; Harmon, Lambrinos, & Buffolino, 2010; Krask, 2007; Howell, Sorenson, & Tippets, 2009; Krsak, 2007). Many institutions provide this software, such as *Respondus Lockdown Browser*TM (<http://www.respondus.com/products/lockdown-browser/>), and assist the instructor in utilizing the system. Given the trend of students using multiple devices (smart phones, notebooks, and laptops), locking down a browser may only result in their using an alternative connection.

Confirming the test-taker's identity is another tactic to document who is taking the test, a challenge of growing concern for both open courses and those courses in which the instructor is less likely to know the student personally or by sight. Some faculty members require the use of a webcam so that the instructor can 'see' who is taking the test (Krsak, 2007). This necessitates that the instructor already knows the student or has a photograph and it also requires some effort on the part of the instructor to monitor. More sophisticated solutions involve biometrics such as fingerprint scans, optic retinal, palm vein scanning, face recognition, or keystroke pattern analysis (Harmon, Lambrinos, & Buffolino, 2010; Howell, Sorenson, & Tippets, 2009; Krask, 2007; Kraglund-Gauthier & Young, 2012). As this technology becomes more prevalent in online interactions in general (such as banking)

it most likely will be more accessible for higher education.

Plagiarism detection tools provide a comprehensive service to those courses requiring extensive writing where plagiarism is more prevalent (Gibson, Blackwell, Greenwood, Mobley, & Blackwell, 2006; Sileo & Sileo, 2008). While these tools cannot detect whether or not someone other than the student wrote a paper, they do provide an efficient system for detecting indicators and evidence of plagiarized material. Plagiarism detection services offer a variety of strategies at varying levels of cost comparing text against other published documents, see Table 2.

Table 2
Plagiarism Detection Services

Service	URL	Cost	How it Works
Dupli Checker	http://www.duplichecker.com	Free	Copy and paste text into provided textbox
GLATT Plagiarism Services	http://www.plagiarism.com/	Varies	Three services, one if free with copy and paste into a textbox
Grammarly	http://www.grammarly.com/	Free	Copy and paste text into provided textbox, also reviews grammar
PlagAware	http://www.plagaware.com	Varies	Varies: Free offers copy and paste text into provided textbox
Plagscan	http://www.plagscan.com	Varies	Document upload
ScanMyEssay	http://www.scanmyessay.com	Free	Document upload
SafeAssign	http://safeassign.com	Free to Blackboard™ Clients	Document upload
Turnitin	http://turnitin.com	Varies	Document upload
WCopyfind	http://plagiarism.bloomfieldmedia.com/z-wordpress/software/wcopyfind/	Free	Executable file that analyzes hard drive documents
WriteCheck	https://www.writecheck.com/stat_ic/	Per document	Document upload

Baille and Jortberg (2009) suggest that varied assessment strategies make it challenging to identify a one-size-fits-all solution for preventing cheating and plagiarism and thus technology use that can help authenticate identify and detect plagiarism may be key to limiting academic dishonesty.

Utilize Pedagogical Strategies

Pedagogical solutions offer strategies to prevent academic dishonesty through thoughtfully designed assignments and activities, and learner engagement and self-awareness. Faucher and Caves (2009) find that starting a course with an assessment of student's ethical and moral orientation towards cheating. Baxter & Boblin (as cited in Faucher & Caves, 2009) found that having students identify their stage of moral development can lower incidences of cheating. Additionally they found that using a personality inventory helped to identify those personal characteristics that are associated with cheating, including sexual activity and drug and alcohol use (Buckley, Wiese, & Harvey, 1998; Eastman, Iyer, & Eastman, 2006, as cited in Faucher & Caves, 2009). Several instruments can be used at the beginning of the course to help the instructor as well as the student be aware of orientations towards ethical behavior: "Ethical Position Questionnaire, Sensation Seeking Scale, Beliefs and Values Questionnaire, Myers Briggs Type Indicator, and HESI Personality Profile" (2009, p. 39). Setting the tone for ethical behavior paves the way for students to complete course requirements and be actively responsible for their performance.

Actively engaging the learner to participate in decisions making and taking responsibility for their own learning can result in deeper learning (APA, 1995) that is satisfying and lasting, particularly in those environments that rely on technology to offer instruction (Carmean & Haefner, 2002). Involving students in not only developing course policies but also providing examples of violation of the policy can ensure that there is no question about what constitutes misbehavior (Sielo & Sileo, 2008). This involvement not only engages and empowers the students, it also helps to educate them.

Assignments are core to all academic courses, and there are many opportunities to cheat or plagiarize. In an online course where assignments are submitted digitally and there is limited monitoring by the instructor, students may use work done by students in previous semesters, hire

others to complete work, or work together on assignments even when expressly forbidden to do so.

The following tactics have proven successful to reduce dishonesty in assignments.

- Use performance assessments rather than objective tests to limit opportunities for cheating and plagiarism (Trenholm, 2006/2007). Aligning assessment type with instructional objectives may identify new opportunities to use performance for practice. Using performance for low-stakes formative assessment or high-stakes summative assessment at the end of the course can also make it less appealing and more difficult to cheat or plagiarize.
- When possible, use progressive assessments in which students turn in parts or drafts over time that can be reviewed or graded (Gibson, Blackwell, Greenwood, Mobley, & Blackwell, 2006; Sileo & Sileo, 2008). Such a strategy allows students to reflect on their learning while making it difficult if not impossible to cheat or have someone else do the writing.
- Have students apply personal experience or current events when answering questions (Krsak, 2007). By giving examples, illustrations, problems, etc. that are current and of specific interest to the student it is more difficult to share answers or have someone else do the writing (Sileo & Sileo, 2008).

Making students accountable for their work supports integrity and responsible behavior. In the online course where behavior is not readily observed, establishing accountability must be built into course requirements. Key to making sure students don't lapse into complacency and seek shortcuts requires the use of multiple types of assessments, and providing consequences. Using a variety of assessment methods so that student achievement is measured in different ways that makes it more difficult to cheat, e.g., discussions, journals or blogs, quizzes, or classroom assessment techniques (Dixon 2011; Sileo & Sileo,). An Illinois Community College online report (Holahan, Fischbach, Fisher, Campbell, & Rohr, 2005 as cited in Baille & Jortberg, 2009) articulates ten categories of assessment used in online courses as reported by instructors (see Table 3).

Table 3
Types of Assessment Online Learning (Baille & Jortberg, 2009)

Responses from Instructors	Frequency	Percent
Homework assignments	665	20%
Online tests and/or quizzes	606	19%
Bulletin-board postings	547	17%
Projects/papers	494	15%
Participation in chat room	313	10%
Proctored tests and/or quizzes	234	7%
Team projects	149	5%
Reflective journal	92	3%
Student portfolio	79	2%
Other	31	1%
TOTAL	3,200	100%

Accountability should also be reinforced through consequences. For example, when plagiarism occurs, require that the paper be re-written to educate and to hold students accountable (Sileo & Sileo, 2008).

Creating a culture of openness can also facilitate a climate of integrity and honesty about the value and priority of ethical behavior. Addressing occurrences of academic dishonesty openly and directly helps to establish classroom norms (Gibson, Blackwell, Greenwood, Mobley, & Blackwell, 2006). When students are part of the discussion they are more likely to adopt desired behaviors. Teaching students how to use writing styles they help them understand the reasons for plagiarizing (Gibson, Blackwell, Greenwood, Mobley, & Blackwell, 2006; Sileo & Sileo, 2008). Links to tutorials, short style guides, and embedded quiz items over style rules can reinforce expectations so that reminders are associated in many areas. Finally, offering ‘public’ interactions makes actions more visible and may lessen temptation to be dishonest. Providing opportunities for students to interact with others and with the instructor through chat rooms, discussion boards, etc. helps to establish and nurture social presence and community (Sileo & Sileo, 2008; Trenholm, 2006/2007).

It may be that sociocultural factors are directly related to the frequency of academic dishonesty in online environments. Some argue that it is the perceived distance between the instructor and learner that has created the perception that cheating is more frequent in online courses, and therefore by closing this gap, academic dishonesty will be diminished (Rowe, 2004). Such a claim supports Moore's (2007) theory of transactional distance in online courses where the further apart students are from the instructor, the more likely there is to be misunderstanding, unclear communication and isolated students who may feel disconnected from the course and its members. If this were the case, then increasing social presence in online courses would lesson incidences of academic dishonesty. LoSchiavo and Shatz (2011) confirm that that students' perception of instructor presence is a factor in the frequency of and determination to cheat. They believe that if students feel that the instructor is 'present' throughout the course and being responsive to communication, cheating is likely to be limited. Swan (2004) reports that social presence can support learning and that interaction supports social presence. Therefore feedback, announcements, and acknowledgements may help students experience instructor presence and oversight that they may not perceive when instructors are less active.

While there is much to be done at the course level, reinforcing academic integrity across courses and in all institutional settings raises expectations and communicates the value of the student's actions regardless of their environment. Institutional policies are a core part of enforcing course level strategies.

Institutional Reduction of Academic Dishonesty

Institutions that promote and enforce honor codes have lower rates of academic dishonesty (Gibson, Blackwell, Greenwood, Mobley, & Blackwell, 2006) which indicates that institutional level

strategies can be effective. WCET (2009) makes the following recommendations for academy integrity in general that can inform campus policies:

1. Campus policy clearly states faculty and student responsibilities
2. Enforce the policy and support faculty and staff in the enforcement
3. Ensure easy access to the policy and expectations
4. Integrate ethics education in core program also that all learners understand the requirements
5. Include academic honesty in student orientations
6. Enforce instructors reporting

Only one of the WCET recommendations specifically relates to online learners: Utilize secure student logins. While other recommendations apply to any learner it may be that the online learner is overlooked in traditional means for communicating policies and expectations. For example, WCET recommends orientations and ethics education offered through academic programs. Online students may not be offered a traditional orientation and programmatic requirements may not extend or be available to the 100% online student. Dixon (2011) corroborates these recommendations in results from a comprehensive study of 2,000 liberal arts students in which findings indicate that educating students about what plagiarism is and requiring coursework that focuses on writing style greatly reduces plagiarism.

Many institutions provide plagiarism detection software as a deterrent and tool to identify plagiarized work. Badge and Scott (2009) analyzing cheating through digital means, found that the investment of electronic detection systems might not have the intended return on investment. Detection systems are not perfect and such errors can result in accusing the innocent and letting the culprit get by without detection. Therefore it is essential to train faculty and staff how to detect plagiarism and use detection software. Even with training detection systems are not flawless and results must be balanced with other information, as well as account for cultural differences that are invisible to a system (Hayes,

2009, as cited in Badge & Scott, 2009). When students from non-Western cultures are assumed to understand and operate according to Western standards of behavior they are at a disadvantage.

Others argue that academic dishonesty somewhat is a factor of course design. Trenholm (2006/2007) found that online courses can be divided into two categories: Writing-Based (WB) and Math or Fact-Based (WFB). Essentially different, these types of courses require different strategies to address academic dishonesty.

WB courses, which tend to be subjective in nature, include discipline areas such as English, history, psychology...MFB courses, which emphasize calculation and/or factual recall, have a tendency to be highly objective in nature, and include discipline areas such as math, science, business, computers, medical technology...While there are certainly significant areas of overlap in how different assessment instruments are administered in these two categories, most math and many science courses, for instance, tend to focus on calculation and fact-based assessment instruments (such as mid-term and final exams) and most English and history courses, for example, tend to focus on writing-based assessment instruments (such as written assignments and term papers). (p. 281)

WB course academic dishonesty policies and prevention strategies should stress and provide instruction regarding plagiarism within a writing style framework with a focus on progressive performance assessments in order to eliminate the attraction of purchasing pre-written papers. WB courses can be served by having no final exam, with a focus on individual writing assignments through which the instructor can identify a “writing fingerprint” unique to each student.

MFB courses would more likely focus on the prevention of cheating and identify verification by providing sufficient practice and low-stakes assessments that students are less likely to make an

effort to have someone else do their work. Because MFB courses are comprehensive in nature they are more likely to utilize proctored exams on campus, or use a remote authentication system.

Bailie and Jortberg (2009) argue the range of assessment types used in online courses requires the use of authentication strategies to verify identity in online courses. Indeed, given the proliferation of services that offer to take a course for a student there is merit in utilizing authentication to endorse, if not confirm, academic honesty: institutions should be able to know who is taking a course. As noted earlier, identity authentication is a requirement as per the United States Department of Education for all online program providers as is the provision of strategies to limit if not control cheating.

Understanding why and how students practice academic dishonesty and conscientious design of courses that build in strategies to limit cheating and plagiarism will only contribute to higher quality and more effective learning experiences for the student.

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