

# INFORMATION SYSTEMS EDUCATION JOURNAL

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# How Students Use Technology to Cheat and What Faculty Can Do About It

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## Abstract

Technology, like most things in life, can provide many benefits to society and improve both the business and academic environments. Technology can also be used in ways that circumvent the educational process and create situations where it is not being used in the appropriate way. College students that use technology to gain access to unauthorized information is a form of academic dishonesty referred to as e-cheating. This can happen both inside and outside of the classroom and takes on many forms. The Internet, in particular, fuels this behavior making it easier, faster, and more convenient than in the past. In addition, electronic devices like smartphones, tablets, and laptops are commonly used across all institutions and will continue to be used for the foreseeable future. Fortunately, faculty can use traditional pedagogical methods for educating, preventing, and reporting academic dishonesty. This paper discusses the common ways technology is being used by students for e-cheating and the actions faculty can take to hopefully reduce academic dishonesty in their courses.

**Keywords:** e-cheating, academic integrity, academic dishonesty, plagiarism, cheating

## 1. TECHNOLOGY: THE GOOD AND THE BAD

### Technology as a Good Thing

Technology can be a good thing. It has the potential and ability to increase the quality of our lives in many ways, if used correctly and appropriately. From allowing us to video chat with friends and family that are far away to providing lower cost shopping options from the comfort of our homes. There have been countless advances in technology in just the last few years that have made our lives easier and more convenient. Navigating with a Global Positioning System (GPS) is just one of the many examples that, in this case, makes it easier and safer to travel. Cell phones have become almost ubiquitous in the hands of most adults in America with over half of those being smartphones (Smith, 2012). These provide an array of features that include messaging tools, calendars, email, and a variety of apps for both productivity and just plain entertainment.

Although some may argue that these particular devices may be a distraction, there are true benefits to most users in terms of faster communication and access to important information. Other more recent innovations include social media, Internet-enabled appliances, and tablet computing. This is just a small sampling of some of the more common and everyday technological devices that can provide many benefits to its users.

Technology can also improve education, providing innovative ways for instructors to teach and creative ways for students to learn. The Internet alone can provide access to simulations and virtual tours that allow educators to expose their students to places and resources otherwise unavailable to many classrooms (Evans, Martin & Poatsy, 2014). Course management software provides a rich online environment that includes tools like assignment submission, test/quiz taking, and

discussion board forums. Computer labs enable instructor-led training and hands-on exercises for students. Smart boards can promote collaboration and enhance instruction. Hand-held clickers and in class polling encourage student engagement (Bain & Przybyla, 2009). It appears that technology in the classroom is here to stay for a long time. In fact, many institutions are touting their use of technology as part of their recruitment efforts (Khan & Samuel, 2009). This use of technology is seen as a benefit to both the instructor and the student.

### **Technology as a Bad Thing**

Technology can be a bad thing. It has the potential and ability to increase the ease in which students gain access to information, both inside and outside of the classroom. Many of the same features that allow technology to make our lives better can also be used in ways that are not appropriate in an academic setting. Student course work, assignments, and papers should always represent their own thoughts, ideas, unless properly cited. Most colleges and universities provide students with a code of conduct and/or academic standards that outline academic integrity and examples of academic dishonesty (McCabe, 2005). Unfortunately, students do not always adhere to these policies. Not only are students cheating, but they also report they are cheating a lot more than faculty think (Puccio, 2008). To make matters worse, technology enables cheating in new and creative ways (O'Neil, 2003). The use of technology for academic dishonesty is not a good thing for students or for faculty. Students miss out on the learning process, reducing their education and possible future employment opportunities. Faculty must spend time policing and reporting, lessening the time that could be spent enriching the content of the course or discussing other relevant topics.

Fortunately, there are actions faculty can take to mitigate, and in some cases, eliminate the use of technology for academic dishonesty. Cheating has been a problem on college campuses before the wide spread use of technology. Some of the same techniques that have prevented it before are still usable, even with "high-tech" cheaters (O'Neil, 2003, p. 4). This paper defines e-cheating, identifies the common types of e-cheating by college students in traditional courses, and provides a list of actions faculty can take to address the issue.

## **2. E-CHEATING DEFINED**

The term e-cheating, or electronic cheating, is not defined in Dictionary.com or the online version of the Merriam-Webster dictionary. However, it is commonly used to refer to the type of academic dishonesty that utilizes some type of technology to electronically copy or use material from an unauthorized source or a source that was not cited. This can include a simple copy and paste from the Internet or some other type of electronic media (Jones, Reid & Bartlett, 2008). It is basically a form of plagiarism, where someone else's work or idea is presented as one's own (ICAI, 2014). The terms online or digital plagiarism may more accurately describe this specific type of plagiarism but e-cheating tends to encompass other acts of cheating as well (Sterngold, 2004). E-cheating may also be called digital cheating and can be as broad as meaning any type of cheating using computer technology (Rogers, 2006). Cyber cheating is another term some times used in this context but this may be confused with acts of infidelity through the Internet or social media so it will not be used in this paper. Regardless of the name or terminology used, e-cheating involves some type of academic dishonesty where computer technology is involved.

## **3. E-CHEATING VERSUS TRADITIONAL CHEATING**

Since e-cheating requires the use of technology. Therefore, it eliminates traditional types of cheating. McCabe (2005) surveyed over 80,000 college students asking questions specific to tests and examinations, primarily related to traditional cheating behaviors. These included items like learning what is on a test/exam from someone who has already taken it, using false excuse to delay taking test/exam, copying from another student on a test/exam with and without his/her knowledge, helping someone else cheat on test/exam, and using unauthorized crib/cheat notes helping someone else cheat on a test/exam (McCabe, 2005).

The focus of this paper is only the type of cheating that uses technology to give a student an advantage that would otherwise not be available to them. Technology, especially the Internet, provides many advantages to people and businesses but it also increases the "opportunities" for cheating (Bracey, 2005, p. 413). In addition, these new opportunities are often easier, faster, and more convenient than

traditional cheating. Technology has advanced significantly in the past decade and continues to provide end users with new and innovative hardware devices and software applications on a regular basis. The same holds true for businesses and information systems that provide better decision making capabilities and methods for increasing competitive advantage (Rainer, Prince, & Cegielski, 2014). With this in mind, it would logically lead one to think that e-cheating has also advanced to creative and new levels. However, that is not necessarily the case. After researching and gathering information on the common types of e-cheating, it tends to occur inside and outside of the classroom in very common ways. The next section describes the common types of e-cheating, providing a summary at the end.

#### 4. TYPES OF E-CHEATING

##### **E-Cheating Inside the Classroom**

The first type of e-cheating happens inside of the classroom where students use electronic devices to access unauthorized information and use unauthorized electronic devices in other ways, primarily during exams. Students use electronic devices, such as laptops or smartphones, to access the Internet (Jones, Reid & Bartlett, 2008). This provides them with an unending source of materials, examples, diagrams, and information. It even allows them to access items on any course management system, like Blackboard. Instructors vary when it comes to the content provided in these systems but many do provide study guides, presentation slides, and class handouts. Along with access to the Internet, comes access to any web-based email system where students can send themselves notes and any other course material. Smartphones, just like other electronic devices, can also access email and be used to view unauthorized information (O'Neil, 2003). With the increased popularity of e-texts, this also opens up the entire textbook to students during exams if they have access to an electronic device. In addition, smartphones have the capability to store and display almost any type of electronic document. Using this small device is no different than using a laptop or tablet, other than its small and somewhat discreet size. Technology enables more high-tech approaches with devices like transmitters, blue tooth, or walkie-talkies but these are not common and require equipment not readily available to most college students (O'Neil, 2003). Therefore, the majority of college

students rely on electronic devices they already own and know how to use.

The second main behavior inside the classroom is using electronic devices in other ways, again during exams. Students use the text messaging capabilities of both smartphones and IM-enabled calculators to send questions and receive answers from third parties, including people far away (Jones, Reid & Bartlett, 2008). Technology allows this to happen very quickly and easily. Wireless earphones and microphones can also be used to communicate with other students (Jones, Reid & Bartlett, 2008). Of course each of these requires help on the outside but it has happened and fortunately in some cases students have been caught (USA Today, 2003). In addition to smartphones, other electronic devices may be used during exams. Programmable calculators have become quite sophisticated and provide many new features. These can be programmed to store text and pictures, in addition to the standard formulas (Jones, Reid & Bartlett, 2008). Other somewhat creative behaviors include the use of MP3 and smartphone cameras. Forward thinking students can record audio files for MP3 players and use these as well during exams (Jones, Reid & Bartlett, 2008). Again, the pictures from the camera must be sent via text messaging or email to another party making the process a bit more complicated than some of the other methods but certainly doable by students.

Therefore, e-cheating inside the classroom requires the use of an electronic device to access unauthorized information from a variety of sources. The methods vary but the use of a device remains consistent and a necessary factor in order for the academic dishonesty to occur.

##### **Summary of E-Cheating (Inside)**

- Use of electronic device to access unauthorized information
  - Internet
  - E-mail
  - E-Texts
  - Electronic documents/files
- Use of text messaging (including IM-enabled calculators)
- Use of programmable calculator
- Use of cameras
- Use of MP3 players
- Use of wireless earphones and microphones

### **E-Cheating Outside the Classroom**

The second type of e-cheating happens outside of the classroom where students tend to copy, purchase and use information from the Internet. The Internet provides a variety of materials that are easily accessible to anyone with access and the basic skills to perform a search. The term google is now included in the dictionary as a verb for searching information on the Internet. Since the results of these searches are electronic, students can quickly copy and paste the information directly into assignments, papers, and other documents (Szabo & Underwood, 2004; Sterngold, 2004). The copy and paste action is not limited to the Internet with students having access to other types of electronic media as well. Online textbooks (e-texts), articles in PDF format from libraries, email, and course management systems are just a few examples. One rather new item is Amazon's "Search Inside the Book" feature, which allows searching and viewing information from books directly online (Sterngold, 2004). Of course, students have the option to cite all of this information if they so chose but, as instructors, we know this does not always happen. In fact, to make it even easier for students there are many web sites dedicated to cheating like [www.schoolsucks.com](http://www.schoolsucks.com), [www.cheathouse.com](http://www.cheathouse.com), and [www.123helpme.com](http://www.123helpme.com) (Jones, Reid & Bartlett, 2008). Some of these sites provide information for free while other charge a nominal fee for completed papers. This leads to the discussion of purchasing items from the Internet or via email.

Although this has been done in the past without the use of technology, the Internet and email make it easier, faster, and anonymous for students to purchase materials to use and submit as their own course work. Students can buy all sorts of documents, including papers, online (Sterngold, 2004). Various sites also sell solution manuals, test banks, and instructor manuals. Students have been caught using exact words from instructor manuals in their course work (Puccio, 2008). To make it even easier, YouTube provides videos that direct students to email addresses and websites for such items (Buy Test Banks, 2014). The amount of material and information that is easily and quickly available online will continue to increase and will be a constant source of help to students. Students are comfortable with the online world and the use of electronic resources not only for schoolwork but also for many other

aspects of their lives, like social media. They use this environment on a daily basis for social interaction, product reviews, directions, weather reports, and shopping. Students even use Facebook for cheating and it has become another online tool that can be used to share information, like exam questions (Bi, 2013). The overall use of technology in many different ways is just normality today for most students.

E-cheating outside of the classroom requires the use of the Internet and the many options available online for accessing a variety of material. This environment provides the ability to easily copy and paste information, purchase ready-made materials, and use a variety of resources to obtain unauthorized help on assignments. These methods are more difficult for instructors to see since they are happening outside of the classroom and away from the normal face-to-face time of a traditional class setting.

### **Summary of E-Cheating (Outside)**

- Copy information from the Internet
- Copy information from electronic media
- Purchase papers/documents from the Internet
- Purchase solution/instructor manuals from the Internet or by email
- Purchase test banks from the Internet or by email
- Use of Cheating Web Sites
- Use of Amazon's Search Inside the Book
- Use of Social Media to share information

## **5. FACULTY ACTIONS FOR E-CHEATING**

Technology has enabled students with a plethora of options for academic dishonesty and faculty need to be aware of the many actions they can take to help educate students about academic integrity, assist in preventing academic dishonesty and report incidents when they happen.

### **Educating Students about E-Cheating**

One of the first actions faculty can take to reduce e-cheating in their courses is to *educate* their students about academic integrity. This includes maintaining a specific academic integrity policy and discussing this information with the students (Lang, 2013). There are many ways to do this and a variety of options available for faculty to incorporate into their particular teaching styles. First, provide "explicit" descriptions of plagiarism and academic

dishonest to students (Puccio, 2008, p. 20). This can be done as a separate document or as part of the course syllabus but regardless the information should be discussed directly with students in class, preferably at the beginning of the term and again before each high-stake assignment. However, including the information on course syllabi is strongly suggested by many researchers in this area (Baldwin, 2001; Novotney, 2011). Included in this information should also be a description of the "harm" academic integrity does to students themselves (Davis, 2009, p. 345). The information can also be delivered in the form of a quiz or survey, for a grade or not. Many students enjoy this type of format and it can be used as a way to reinforce the topic and engage the students. For a more modern approach, the International Center for Academic Integrity provides a series of short videos depicting examples of what constitutes academic dishonesty and why it is so important (ICAI, 2014). Students make and star in most of the videos and use common examples of both traditional and e-cheating behaviors. These can help clarify expectations of students. At the University of California San Diego, a student group called AIM (Academic Integrity Matters) promotes academic integrity through awards and a petition. This petition focuses on three items, educating students, reducing opportunities and reporting cheating (AIM, 2014). Educating students should also include the reporting process of incidents and the resulting consequences, which adheres to one of the ten principles of academic integrity (McCabe & Pavela, 2004). Even with the advances in technology, faculty can reduce e-cheating by adopting the non-technical practice of educating students early and often.

### **Preventing Students from E-Cheating**

The second action faculty can take is to *prevent* e-cheating by incorporating certain techniques into their course and course work. Inside the classroom, the most obvious action is to prohibit all electronic devices during exams (Jones, Reid & Bartlett, 2008). This addresses each of the most common behaviors students use in the classroom to cheat. Of course, students must be instructed of this at the beginning of the term as well as immediately prior to each exam. Faculty must also actively proctor during the exam to ensure students conform. The techniques for preventing e-cheating outside of the classroom are very different than the ones for inside. The first item that should be addressed is student paper writing. There

appears to be several approaches to prevent problems in this area. First is the use of anti-plagiarism software tools like TurnItIn and SafeAssign (O'Neil, 2003). Both products provide an environment where students submit their papers to the system and then faculty can use a variety of features to grade the papers plus check for the use of similar text from the Internet or other papers. One of these features is an Originality Report in TurnItIn that shows a percentage for the amount of text in the paper that is similar to other works (TurnItIn, 2014). If used properly, this feature alone could provide significant deterrence of copy/paste by students. The downside to these tools is that the institution must provide the tools, student must have access, and faculty must be trained on their use.

The second approach for *preventing* e-cheating on student papers focuses on the assignment itself in terms of its design and implementation. Puccio (2008) recommends that faculty use unique assignments. This reduces the chances that similar papers will be available online, free or otherwise. Faculty can also use this opportunity to create more creativity in their assessments, helping to further engage the student (McCabe, 2005). The more specific the paper is to the course or the discussions in the classroom, the less likely it would be duplicated at another institution. Other researches recommend dividing the paper into smaller parts that are submitted over a designated time period and putting restrictions on the source material, like copies or a designated list (Baldwin, 2001; Puccio, 2008; Sterngold, 2004). These and any other additional parameters help to limit the type of mass online copying so easily available outside of class. Student papers can be very similar to but can also be very different than other types of assignments and assessments.

Faculty can reduce e-cheating by using techniques for assignments as well. Lang (2013) suggests offering more frequent, low-stake assignments that reduce the pressure on students. This technique again makes it more challenging to use someone else's information or copy text from the Internet. Faculty can also apply some of the same principles to assignments that are recommended for papers by making the assignments meaningful and ensure they have clear instructions (Baldwin, 2001). The more direction students are given, the less likely they will turn to other resources



for assistance. (AIM, 2014) also suggests that faculty not use the questions in the textbook for homework assignments. This makes sense knowing that students can get access to solution and instructor manuals. These prevention techniques allow instructors the ability to discourage e-cheating before it becomes an issue, regardless of the type of technology that exists today or the future. Unfortunately, students will continue to cheat even after being educated by faculty and in courses that use a variety of prevention tactics. In these cases, it is very important for faculty to take some type of action and report the incident.

### Reporting Students for E-Cheating

The third action faculty can take to reduce e-cheating is to *report* incidents and deliver the appropriate consequences. Students know that cheating is happening inside and outside of the classroom. They also know that much of this goes unnoticed and does not get reported (AIM, 2014). To make matters worse, faculty can be reluctant to report due to the lack of evidence or reporting requirements (McCabe, 2005). The side effect for both of these is an environment where students feel that cheating is not taken seriously. This can also encourage students to participate in this behavior knowing the chances of being caught and/or reported are low. Therefore, it is vital that faculty respond to incidents of academic integrity in an appropriate way. Puccio (2008) recommends that faculty should be involved and all offenses should be reported in some way. The penalties for e-cheating should vary by the type and severity of the offense. However, all students that are rightfully caught engaging in this type of behavior should receive some type of penalty (Lange, 2013). Faculty, of course, must follow the policies at their respective institutions. The key here is to ensure that the faculty member takes some type of action, regardless of severity. Students need to know that the instructor and the institution take academic dishonesty seriously. The hope is that students see faculty as a role model and will model their behavior appropriately.

### Summary of Faculty Actions

#### Educating

- Maintain an academic integrity policy
- Describe plagiarism and academic dishonesty
- Set clear expectations
- Explain academic dishonesty consequences

#### Preventing

- Prohibit use of electronic devices during exam
- Use anti-plagiarism software tools to limit access to electronic information
- Create unique, creative, and course-specific assignments
- Divide papers into smaller components
- Apply requirements to sources for papers
- Assign more frequent, low-stake assignments
- Provide meaningful and clear instructions on assignments
- Use assignments that are not included in the textbook

#### Reporting

- Respond to all incidents of academic dishonesty
- Penalize students with appropriate consequences

## 6. CONCLUSIONS

Technology provides many benefits to society and especially to college students, by providing ease of access to a variety of resources. Along with this access comes the temptation to use this information in ways that circumvent the learning process. E-cheating is using this technology to commit academic dishonesty by cheating or plagiarizing, regardless of when or where it is happening. For traditional college courses, technology can be used in the classroom to provide students access to unauthorized resources and information. Technology can also be used outside the classroom to find answers to assignments, text for papers, and completely written papers. The most common types of e-cheating inside the classroom focus primarily on using electronic devices to access and/or receive unauthorized information during exams. There are minor occurrences of other high-tech e-cheating but these are rarer and require sophisticated equipment. Outside the classroom, the Internet rules as the place to find information for all types of course, free or for a minor fee.

In a world with such amazing technology and an Internet as sophisticated as it has become, student methods for e-cheating are not so elusive for faculty to address. Faculty can simply use traditional pedagogical methods for educating, preventing, and reporting academic dishonesty. Students cheat less when they are

better educated and consistently reminded about the nuances of academic integrity. Faculty can prevent e-cheating by using low-tech pedagogical techniques like banning electronic devices during exams and designing assignments that promote academic integrity. Lastly, faculty members need to report incidents of academic dishonesty and apply appropriate consequences to students. These actions of educating, preventing and reporting require little, if any, technical skills on the part of the faculty. With the exception of software tools that automatically detect plagiarism, traditional and low-tech methods of pedagogy can address the majority of e-cheating.

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