Technology and Academic Dishonesty – Part I: A Focus on Students

PROF. JOSEPH M. KIZZA* ,
Editor-in-Chief

The rapid technological developments of the last twenty years have been a catalyst in creating new avenues of academic dishonesty for both students and faculty. Although this vice has ravaged the academic community for years, it has reached epidemic proportions because of the Internet. Academicians at every level are submitting works verbatim, most of such works downloaded from the Internet. Students at many academic institutions around the globe are falling victims to the vice. This article is part I of a two part series of articles discussing academic dishonesty. In this part we discuss academic dishonesty among students highlighting how the Internet has impacted these practices, the efforts being made to curb them and the effects they are having on society.

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1. INTRODUCTION

The rapid technological developments of the last twenty years have been a catalyst in creating new avenues of academic dishonesty for both students and faculty. Although this vice has ravaged the academic community for years, it has reached epidemic proportions because of the Internet. Academicians at every level are submitting works verbatim, most of such works downloaded from the Internet. Faculty and scientists, under the weight of publish or perish, or seeking a minute of fame, can very easily sex up data or publish works of others as their own.

There are several types of academic dishonesty including:

- Plagiarism - the act of using another person's ideas or writings as one's own without acknowledgement for their use
- Fabrication - making up results and recording or reporting them
- Falsification of information, data or citation through authorized or unauthorized access and presenting that data as original; presenting information or data that were not gathered in accordance with standard guidelines defining the appropriate methods for collecting or generating such data and failing to include an accurate account of the method by which the data were gathered or collected
- Cheating - which involves using unauthorized material or information on an examination; altering graded material; using another person's work as your own without prior permission.

The U.S. based National Science Foundation (NSF) defines **research misconduct** as "fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the scientific community for proposing, conducting or reporting research. These are by no means

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* Author's Address: Joseph M. Kizza, Department of Computer Science and Engineering, The University of Tennessee-Chattanooga, Chattanooga, TN 37403, USA, *Joseph-kizza@utc.edu*.

new vices, but they have been given momentum, visibility, made easy, seemingly decriminalized, and at times even legitimized through the use of the Internet. This article is part one of a two part series of articles discussing academic dishonesty. In part I appearing in the *International Journal of Computing and ICT Research* Special Issue Volume 3 Number 1, October 2009 will discuss academic dishonesty among students and in part II appearing in the Volume 3 Issue 2, December 2009 of *International Journal of Computing and ICT Research*, will briefly survey academic dishonesty among university faculty, researchers, and other higher education and research institution personnel. What follows is a discussion highlighting how the Internet has impacted these practices, the efforts being made to curb them and the effects they are having on society.

2. PLAGIARISM

The word *plagiarism* comes from a Latin verb meaning *to kidnap*. It describes the process of intentionally or even unintentionally "kidnapping" which in every aspect is stealing others people's work and intellectual property without their consent. On academic institutions and research sites across the globe, this vice has been sky-rocketing ever since the start of the Internet.

According to a study by Donald L. McCabe, founder of Center for Academic Integrity at Duke University, which is published in *The New York Times*, thirty-eight percent of undergraduates have participated in some form of Internet plagiarism, What is even more surprising, those students did not consider plagiarism to be cheating [McCabe, 2003]. Technology has made it very easy for students to literally lift term papers and only change authors' names. The Internet has given credibility to the paper mills that are the sources of all types of papers on almost any topic, and made access to them quite easy. The availability of newspaper, magazine and full text journal articles online has also increased the temptation to plagiarize such items. Student plagiarism is not limited to just lifting term papers from the Internet, it has gone beyond that and is mainstreamed into the realms of computing science and engineering disciplines. In these disciplines, technology has created a plagiarism epidemic that is not only eroding the ethics of individuals but has serious consequences in the safety and security of both hardware and software systems that run all computing systems that we have come to depend. Programming has become an art of googling code and cut-and-paste. Students rarely get challenged to write their own programs from scratch and debug them. Consequently, we can no longer take it for granted that the author of any computer program understands the program or has tested it.

3. FABRICATION AND FALSIFICATION

Fabrication is the practice of "doctoring" data or results to suite a "wished", expected or prescribed outcome or reporting. Falsification on the other hand is the process of "sexing up" existing data to fit a specific study. Both of these schemes are dangerous to research because they alter the reliability of data that may be used in systems that are sometimes vital to life putting thousands of lives in danger and sometimes death. Ideally, the research community would not expect fabricated and falsified data. However, we do not live in Utopia. We live in a real world of money making schemes and competition. Studies have shown that fabrication and falsification are widespread practices through all sectors of society including academia. Just as plagiarism diminishes the value of the works and tarnishes the integrity and ethics of the author, fabrication and falsification of research data diminishes the status of the research and may create a dangerous situation for those who use such data.

Incidences of falsification and fabrication among students are not clearly documented; perhaps it is all taken as plagiarism; perhaps students may find it difficult to falsify and fabricate data under the watchful eyes of their instructors and laboratory assistants, but these incidences are on the rise across college university campuses globally.

4. ACADEMIC CHEATING

Academic cheating is defined as presenting someone else's work as your own. It comes in many forms, including sharing another's work, purchasing a term paper or test questions in advance, and paying another to do the work for you. Among college student cheating is widespread. Again according to McCabe, 87 percent of students surveyed in 1993 admitted to cheating on written work, 70 percent cheated on a test at least once, 49 percent collaborated with others on an assignment, 52 percent copied from

someone and 26 percent plagiarized [McCabe, 2003]. Although academic cheating is as old as academia itself, technology has fueled the practice, giving academic cheaters new, convenient tools like memory based calculators and camera phones.

The Education Testing Center (U.S.A.) studied cheating in U.S. schools and gives the following interesting statistics observed on cheating during this technological era [Education Testing Center]:

- Statistics show that cheating among high school students has risen dramatically during the past 50 years.
- In the past it was the struggling student who was more likely to cheat just to get by. Today it is also the above-average college bound students who are cheating.
- 73% of all test takers, including prospective graduate students and teachers agree that most students do cheat at some point. 86% of high school students agreed.
- Cheating no longer carries the stigma that it used to. Less social disapproval coupled with increased competition for admission into universities and graduate schools has made students more willing to do whatever it takes to get the A.
- Grades, rather than education, have become the major focus of many students.
- Fewer college officials (35%) believe that cheating is a problem, in this country than do members of the public (41%).
- High school students are less likely than younger test takers to report cheaters, because it would be "tattling" or "ratting out a friend."
- Many students feel that their individual honesty in academic endeavors will not affect anyone else.
- While about 20% of college students admitted to cheating in high school during the 1940's, today between 75 and 98 percent of college students surveyed each year report having cheated in high school.
- Students who cheat often feel justified in what they are doing. They cheat because they see others cheat and they think they will be unfairly disadvantaged. The cheaters are getting 100 on the exam, while the non-cheaters may only get 90's.
- In most cases cheaters don't get caught. If caught, they seldom are punished severely, if at all.
- Cheating increases due to pressure for high grades.
- Math and Science are the courses in which cheating most often occurs.
- Computers can make cheating easier than ever before. For example, students can download term papers from the World Wide Web.
- "Thirty years ago, males admitted to significantly more academic dishonesty than females. Today, that difference has decreased substantially and some recent studies show no differences in cheating between men and women in college."
- Cheating may begin in elementary school when children break or bend the rules to win competitive games against classmates. It peaks during high school when about 75% of students admit to some sort of academic misgivings.
- Research about cheating among elementary age children has shown that: There are more opportunities and motivations to cheat than in preschool; Young children believe that it is wrong, but could be acceptable depending on the task; Do not believe that it is common; Hard to resist when others suggest breaking rules; Need for approval is related to cheating; Boys cheat more.
- Academic cheating begins to set in at the junior high level.
- Research about cheating among middle school children (Ages 12-14) has shown that: There is increased motivation to cheat because there is more emphasis on grades; Even those students who say it is wrong, cheat; If the goal is to get a good grade, they will cheat.
- According to one recent survey of middle schoolers, 2/3 of respondents reported cheating on exams, while 9/10 reported copying another's homework.
- According to the 1998 poll of Who's Who among American High School Students, 80% of the country's best students cheated to get to the top of their class. More than half the students surveyed said they don't think cheating is a big deal – and most did not get caught.

- According to surveys conducted by The Josephson Institute of Ethics among 20,000 middle and high school students, 64% of high school students admitted to cheating in 1996. That number jumped to 70% in 1998.
- Research about cheating among college students has shown the following to be the primary reasons for cheating: Campus norm; No honor code; Penalties not severe; Faculty support of academic integrity policies is low; Little chance of being caught; Incidence is higher at larger, less selective institutions.
- Additional influencers include: Others doing it; Faculty member doesn't seem to care; Required course; No stated rules or rules are unclear; Heavy workload.
- Profile of college students more likely to cheat: Business or Engineering majors; Those whose future plans include business; Men self-report cheating more than woman; Fraternity and Sorority members; Younger students; Students with lower GPA's or those at the very top.
- Cheating is seen by many students as a means to a profitable end.
- Cheating does not end at graduation. For example, resume fraud is a serious issue for employers concerned about the level of integrity of new employees.

5. GOING AFTER STUDENTS' ACADEMIC DISHONESTY:

Fighting these vices among students needs to have a multi-faceted approach that includes policies and detection tools.

Policies

A cheating and plagiarism policy would include a definition of the vice, a list of items that would constitute the offense resulting from the vice, the enforcement mechanisms available to the instructor and the penalties for the offender. Here is a sample of a Policy on Cheating and Plagiarism from Carnegie Mellon University (http://www.cmu.edu/policies/documents/Cheating.html).

Policy on Cheating and Plagiarism

Students at Carnegie Mellon are engaged in preparation for professional activity of the highest standards. Each profession constrains its members with both ethical responsibilities and disciplinary limits. To assure the validity of the learning experience a university establishes clear standards for student work.

In any presentation, creative, artistic, or research, it is the ethical responsibility of each student to identify the conceptual sources of the work submitted. Failure to do so is dishonest and is the basis for a charge of cheating or plagiarism, which is subject to disciplinary action.

Cheating includes but is not necessarily limited to:

1. Plagiarism, explained below.
2. Submission of work that is not the student's own for papers, assignments or exams.
3. Submission or use of falsified data.
4. Theft of or unauthorized access to an exam.
5. Use of an alternate, stand-in or proxy during an examination.
6. Use of unauthorized material including textbooks, notes or computer programs in the preparation of an assignment or during an examination.
7. Supplying or communicating in any way unauthorized information to another student for the preparation of an assignment or during an examination.
8. Collaboration in the preparation of an assignment. Unless specifically permitted or required by the instructor, collaboration will usually be viewed by the university as cheating. Each student, therefore, is responsible for understanding the policies of the department offering any course as they refer to the amount of help and collaboration permitted in preparation of assignments.
9. Submission of the same work for credit in two courses without obtaining the permission of the instructors beforehand.

Plagiarism includes, but is not limited to, failure to indicate the source with quotation marks or footnotes where appropriate if any of the following are reproduced in the work submitted by a student:

1. A phrase, written or musical.
2. A graphic element.
3. A proof.
4. Specific language.
5. An idea derived from the work, published or unpublished, of another person.

Plagiarism Detection Software & Services

Because the numbers of students usually taught by one instructor may be big, it may be a challenge to teachers to find less tedious ways to find cheaters. Fortunately the technology that is spearheading the growth of these vices is the same technology that is providing the remedy for them. With the growth of plagiarism, fabrication, falsification, and cheating, there is a growing base of technologies to fight them. There are several software tools (sometimes free) like Viper on (http://www.scanmyessay.com/viper-plagiarism-scanner.php), WCopyfind on (http://plagiarism.phys.virginia.edu/Wsoftware.html), pl@giarism (http://www.plagiarism.tk). Other sorces include:

- EVE2: http://www.canexus.com/eve/index.shtml
- WordCheck Systems: http://www.wordchecksystems.com/
- iParadigms: http://www.iparadigms.com/
- Glatt Plagiarism Program: http://www.plagiarism.com/

Depending on the nature of the suspected work, a teacher can use the software to compare the paper against textbooks, literature, works of other students, or the products of online paper mills--sites where students can download papers.

Although we cannot explore all efforts being made to curb academic dishonesty here because of time limits, literature on the topic abounds. You can find useful information on this topic, guess where - Internet

6. EFFECTS OF ACADEMIC DISHONESTY ON SOCIETY

Academic dishonesty and sexing up of ideas have some very negative effects on society. Such effects include ethical and moral decay as people's actions become routine and eventually mainstreamed. Florence King notes in the *National Review* that "once plagiarism becomes an officially designated addiction, its sufferers will not only be forgiven, but admired." [King , 2002]. There are also serious psychological effects on individuals who commit these vices as they tend to become reclusive and self-isolated which may lead to dangerous consequences on the individual and society. There are serious security and safety problems to society because essential products like software and hardware systems which may be made up of untested and often falsified data may become mainstreamed.

7. REFERENCES

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