Academic Dishonesty: A Study of CIS Student Cheating Behavior

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Abstract

As the demand for technology innovations increases in business organizations, the staff that develops and maintains the information technology for the organization become increasingly more important. One aspect of research interest, related to information technology personnel, is their moral and ethical values. Prospective employers rely on the integrity of a student's academic record. Clearly, dishonest behavior on information systems examinations impacts the professional qualifications of the student. In addition, dishonesty undermines the trust and confidence that managers place in the new employee. In this study we try to gain insight into the ethical behavior of junior and senior level Computer Information Systems students. The results are analyzed based upon student classification, grade point average, and gender. Indications are that seniors, students with lower grade point averages, and males have a higher propensity to engage in academic dishonest behavior.

Keywords: Academic dishonesty, ethical behavior, cheating, information systems

1. INTRODUCTION

Increasingly, companies that are the most competitive are those that employ the most technology in their methods (Prabhaker, Goldhar and Lei 1995). Strategist Michael Porter (1995) noted that because technology is constantly changing, global competitiveness requires the ability to innovate rapidly. As the demand for technology innovations increases in business organizations, the staff that develops and maintains information technology (IT) for an organization become increasingly more important. One aspect of research interest, related to IT personnel, is their moral and ethical values.

Many researchers have studied the ethical behavior of information system specialists, conducting studies on both the practicing information systems professional and college students majoring in information systems. In one such study, Paradice and Dejoie (1991) compared the ethical decision making processes of computer information systems (CIS) majors and non-CIS majors. In another study in 1998, Perreault and Keith stressed the need for computer-related ethics to be part of a total education program.

And recently, prominent information systems author Ed Yourdon called for IS professionals to take a strong moral and ethical stand related to delays and problems that occurred as companies ran out of time to complete their year 2000 remediation efforts. He stated that "many of us will face the most difficult moral and ethical decisions we've ever made" related to potential year 2000 obligations (Yourdon 1998).

So what does this mean for students as they prepare to enter the professional IS arena? Is their moral and ethical compass sufficiently developed to enable them to make the proper decisions that will be soon thrust upon them? In this paper we report on a study that was undertaken to gain insight into the academic dishonesty behavior of junior and senior computer information systems students at a large state public university (20,000+ students). The study utilizes a series of questions about the student's own dishonest behavior, their observations of other students' behavior, and about the conduct of students in computer information systems classes.

2. BACKGROUND

Professional information technology organizations have codes of ethics that emphasize the expected ethical practices of their members. Excerpts from the code of ethics of two prominent professional organizations, the AITP and the ACM, are given here as a reminder of the standards set for IT professionals.

The Association of Information Systems Professionals (AITP) in its Code of Ethics stresses the obligations of its members. Those obligations are to promote the understanding of information systems to management, fellow members, society, college or university, employer, and country (AITP 1999). As stated by the AITP: "The Code of Ethics is a standard that reminds us and binds us to the obligations that we hold as technology professionals. These ideals are principles that all members should hold as a basis for their everyday careers (AITP 1999)."

Three of these principles related to this study are:
- Cooperate with fellow members and treat them with honesty and respect
- Uphold the ethical and moral principles of my College or University
- Guard my employer's interests and advise him or her wisely and honestly

Honesty, respect, ethical and moral issues are at the core of the AITP's commitment to providing professional leadership and education in information technology.

Additionally, the ACM Code of Ethics and Professional conduct opens with the following line: "Commitment to ethical professional conduct is expected of every member of the Association for Computing Machinery (ACM Council 1992)." This Code consists of 24 imperatives formulated as statements of personal responsibility and identifies the elements of such a commitment. It addresses many issues that information systems professionals are likely to face, including fundamental ethical considerations.

The Code and its guidelines are intended to serve as a basis for ethical decision making in the conduct of professional information systems work. While the entire Code of 24 moral imperatives form the complete commitment, this study will address the third imperative that may be considered at the cornerstone of moral and ethical behavior.

- Be honest and trustworthy

Honesty is considered to be an essential component of trust. Without trust an organization cannot function effectively. In a more fundamental sense, an information systems professional also has a duty to be honest about his or her own professional qualifications (ACM Council 1992). Prospective employers rely on the integrity of a student's academic record. Clearly, dishonest behavior on information systems examinations impacts the professional qualifications of the student. In addition, dishonesty undermines the trust and confidence that managers place in the new employee. Trust is the glue that holds the business relationships together (Marshall 1999). One author has gone so far as to state that hiring honest employees can be the difference between success and failure for the organization (Lousig-Nont 1999).

However, little is known with certainty about cheating behavior, since students are reluctant to discuss this behavior with their professors. This study stresses anonymity in an attempt to overcome this reluctance and collect credible information on this sensitive, but important issue.

3. OVERVIEW OF STUDY

This study was conducted at a large public state university. The sample size was large with over 300 students. Students in junior and senior level required information systems classes participated in this survey. All questions were 'yes or no' response questions (Table 1). All questionnaires were administered during regular class meeting times at the end of the semester. Students were assured anonymity when taking the survey. In order to provide anonymity the professors were out of the classroom during survey administration and the responses were collected on Scantron forms to make observation by neighboring students more difficult.

The first three questions (refer to Table 1) describe specific cheating behaviors that might occur within the context of information systems courses. The next two questions (4, 5) describe specific observed behavior by students. In questions 6 & 7, normative beliefs that a student may not openly feel comfortable in expressing were explored. Questions 8 & 9 were given to allow students to express their opinions on exam monitoring and content.

4. FINDINGS

Results of the survey were examined on the basis of student classification (junior or senior), grade point average (GPA), and gender. Previous studies have used these groupings (e.g., Sheers and Dayton 1987; Lichtenfels, et al. 1989; Campbell and Lindsay 1997). The findings of the survey based on these groupings are given in Tables 2, 3, and 4.

Table 1: Questions and Responses

Question	Responses YES NO
1. Have you ever used a cheat sheet in an information systems exam?	
2. Have you ever cheated on an exam by obtaining a copy before taking it?	
3. Have you ever tried to copy from another student's exam paper in an information systems exam?	
4. Have you ever observed another student using a cheat sheet or copying someone else's information systems exam?	
5. Have you ever observed another student telling others about an information systems exam?	
6. Do you believe a student should report cheating by others to the professor of a course?	
7. Do you believe a student caught cheating should be expelled from the university?	
8. Do you think it is OK for the professor to leave the room during an exam?	
9. In your opinion, are most information systems exams unfair?	

Table 2 shows the percentage of 'Yes' responses to the nine questions based upon whether a student is a junior or senior. A larger percentage of seniors than juniors answered 'Yes" to every question, except number 6. Question 6 was related to whether a student should report cheating behavior to the professor of the course.

Table 2: 'YES' Responses of Survey Based on Student Classification

Classification		
Question	**Junior**	**Senior**
1.	2%	5%
2.	9%	10%
3.	8%	19%
4.	44%	55%
5.	48%	75%
6.	60%	58%
7.	43%	45%
8.	16%	17%
9.	19%	29%

Table 3 shows the percentage of 'Yes' responses to all questions based upon GPA. GPA was partitioned into four categories: 2.0 to 2.49, 2.5 to 2.99, 3.0 to 3.49, and 3.5 to 4.0. Results were mixed depending upon the question asked.

Table 3: 'YES' Responses of Survey Based on GPA

	GPA			
Question	**3.5 to 4.0**	**3 to 3.49**	**2.5 to 2.99**	**2 to 2.49**
1.	3%	4%	5%	4%
2.	11%	7%	10%	19%
3.	16%	15%	15%	12%
4.	57%	44%	62%	35%
5.	81%	62%	46%	67%
6.	65%	56%	59%	62%
7.	49%	42%	48%	31%
8.	19%	19%	14%	12%
9.	22%	26%	25%	27%

Table 4 compares the percentage of 'Yes' responses to questions based on the gender of the student respondent. Male 'Yes' responses were higher for every question except Questions 6, 7, and 9. A larger percentage of females were willing to reporting cheating (Question 6), expel a student caught cheating (Question 7), and were more likely to think information systems exams were unfair (Question 9).

Table 4: 'YES' Responses of Survey Based on Gender

	Gender	
Question	**Male**	**Female**
1.	5%	2%
2.	11%	8%
3.	19%	10%
4.	55%	45%
5.	68%	60%
6.	57%	62%
7.	42%	47%
8.	18%	14%
9.	23%	28%

Considering each question individually related to the responses based upon all groupings (classification, GPA, and gender), the following results were observed.

Question 1: **Have you ever used a cheat sheet in an information systems exam?**

This question was asked to determine how many students use illegal cheat sheets during an exam. A difference in behavior can be seen between juniors (2%) and seniors (5%) and between male (5%) and female (2%). Seniors and males were more likely to use cheat sheets.

In this study, the use of cheat sheets by different GPA levels was minimal. In one previous study, Campbell and Lindsay (1997) found that cheat sheet usage differed between higher and lower GPA students.

Question 2: **Have you ever cheated on an exam by obtaining a copy before taking it?**

This question pertained to obtaining an illegal copy of the exam before it was given. The results to this question varied. Juniors (9%) and seniors (10%) showed minimal differences. The lower GPA group (19%) had participated in this behavior almost twice as much as any other level of GPA (11%, 7%, and 10%). Males (11%) were more inclined to obtain a copy of the exam than females (8%).

Question 3: **Have you ever tried to copy from another student's exam paper in an information systems exam?**

This is a specific question asking if a student had ever tried to copy from another student during an exam. The results again showed a definite difference between juniors (8%) and seniors (19%) with seniors cheating over twice as much. Differences between GPA levels show minimal differences except for the lower GPA group that reported lower cheating behavior, 12% compared to other GPA levels with 16%, 16%, and 15%. As with the first question, males admitted cheating more on exams, 19% compared to 10% for females.

In two previous studies (Campbell and Lindsay 1997; Scheers and Dayton 1987), differences were noted between GPA levels. In our study, reported cheating behavior was less prevalent in lower GPA students.

Question 4: **Have you ever observed another student using a cheat sheet or copying someone else's information systems exam?**

Question 5: **Have you ever observed another student telling others about an information systems exam?**

Questions 4 & 5 were related to whether students had observed cheating behavior. In all cases, a large percentage of the students had observed cheating behavior. The same results were found in two previous studies (Campbell and Lindsay 1997; Nelson and Schaefer 1986). In this study, seniors had observed more sharing of information about exams than juniors had. GPA results were mixed.

Question 6: **Do you believe a student should report cheating by others to the professor of a course?**

Question 7: **Do you believe a student caught cheating should be expelled from the university?**

Both questions 6 & 7 were about students' normative beliefs. In question 6, there are minimal differences among groups of students. Although as with two previous studies (Campbell and Lindsay 1997; Nelson and Schaefer 1986), a large percentage of students felt that cheating should be reported.

For question 7, this study showed over 40% of students believed that students should be expelled for cheating except for the lower GPA group where only 31% thought students should be expelled. In two previous studies (Campbell and Lindsay 1997; Nelson and Schaefer 1986), students felt cheaters should be expelled but at a lower percentage (33%).

Questions 8: **Do you think it is OK for the professor to leave the room during an exam?**

Question 9: **In your opinion, are most information systems exams unfair?**

Both of these questions 8 & 9 are requests for student opinions. For question 8, less than 20% of students in our study felt that the professor should leave the room. This agrees with the results of the Campbell and Lindsay study but disagrees with the results of the Nelson and Schaefer study where students unanimously thought the professor could leave the room.

Question 9 shows that more seniors and females thought information systems exams were unfair. As in the Campbell and Lindsay study, our study shows that at least 70% of the students believe exams are fair. In the Nelson and Schaefer study, students overwhelmingly felt exams were fair.

5. DISCUSSION

The nine questions can be assembled into three categories of possible explanation: length of time in school, grade point average, and gender of the student.

Length of Time in School. The data suggests that most responses may change as a function of the length of time a student has been in school. Seniors show more of a propensity to cheat than juniors do.

Observations of cheating (Question 4) may be a function of the length of time in school. Reporting on cheating shows minimal difference between juniors and seniors. Attitude toward fairness of exams (Question 9) does differ between juniors (19%) and seniors (29%).

Grade Point Average. Obtaining a copy of the exam before the exam time was clearly associated with lower GPA. Observed cheating was related to the higher GPA. Expelling a student was clearly associated with the three higher GPA groups. The two higher GPA groups were more in favor of allowing the professor to leave the classroom during the exam.

Gender. Males show a higher propensity to cheat and observe cheating. Female responses are more closely associated with expelling students for cheating and believing that exams are unfair.

6. SUMMARY

This study was conducted at a large public state university. Students in this study were information systems majors, all at the junior and senior level, in required information systems courses. The sample size was large with over 300 students. Confidentiality and large sample size insures the reliability of the study.

Collecting dependable information about student academic dishonesty behavior should enable instructors to design and implement appropriate counter-measures to cheating in information systems classes. Also, student attitudes toward cheating should be addressed in the classroom. Emphasizing appropriate ethical and professional guidelines in information systems classes should be an integral part of information systems instruction.

For the information systems profession to survive, a new emphasis must be placed on ethical and moral issues. A good beginning for all information systems students would be membership in professional organizations such as the ACM, AITP, or IEEE-CS. Faculty should be involved in these organizations, to help promote and emphasize ethical and moral issues.

To meet the challenge of the new Millennium, we must follow the advice of a leading IS professional and scholar, Ed Yourdon. He urges IS professionals and academicians to abide by the principles of the code of ethics in their respective professional organizations (Yourdon 1998). The first three "moral imperatives" of the ACM Code of Ethics, Yourdon emphasizes, are of essential importance:

1. Contribute to society and human well-being
2. Avoid harm to others
3. Be honest and trustworthy.

If we as IS academicians and professionals are willing to promote these moral imperatives to our students, we and society at large will be able to face the future with hope and excitement.

7. IMPLICATIONS FOR EDUCATORS AND FUTURE RESEARCH

The results presented in this study provide some troubling insights into the cheating behavior of information systems students. Cheating behavior in our students attacks the fundamental integrity of the academic environment. As graduates of our respective academic institutions, our students are certified to possess a given level of acquired expertise in information systems. Student cheating circumvents the rigor of the academic process, and allows students to graduate without demonstrating the requisite skill levels. Ultimately, this behavior leads to a devaluation of our degree in the marketplace, depriving our legitimate graduates of fair recognition.

One possible course of action for concerned faculty to overcome the cheating behavior of students is to proactively establish an environment that sends a clear message to students that cheating behavior is not acceptable. As faculty, it is our responsibility to provide ethical role models to our students. Faculty should communicate to students that cheating will not be tolerated, and design classroom and testing protocols that support honesty and integrity. To support this effort, one area of future research could explore the cheating methodologies actually employed by information systems students. The results of this future stream of research could assist faculty in establishing protocols that successfully restrict student cheating behavior. The future integrity of our academic programs is at stake in this issue.

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