

Would You Do It If You Wouldn't Get Caught?: Students' Ethical Decision Making in Computing

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ABSTRACT

This paper discusses the ethical decision practices and perceptions of 93 undergraduate, Computer Information Systems (CIS) students in the College of Business at California Polytechnic University, Pomona. Fourteen ethical scenarios were given to students. Seven scenarios were academically based, such as sharing information about an exam. Seven scenarios were industry based, such as installing unauthorized software. Results are mixed, showing that the majority of students have strong ethical behaviors in issues of property and privacy. In issues of access and policy, students are less sure. Results also show that between academic and industry scenarios, similar ethical issues were rated differently by students.

INTRODUCTION

In the wake of Enron and Martha Stewart, there is a recognition that schools of business have neglected ethical decision making as an important part of undergraduate curriculum. Most schools find themselves struggling to cover all the content needed for a comprehensive business degree. In four-year program, the number of units required to earn an undergraduate business degree is enormous. Consequently, business programs are under pressure to combine and cut courses, finding creative ways to grant 4 year degrees. Ethics is a course that often finds itself on the cutting block. Arguments such as "You cannot teach ethics" and faculty that claim, "We cover ethics in my course." keep the topic of business ethics at a minimum in business curriculum.

Arguments for a separate ethics course and for integration for integration of ethics throughout business curriculum abound. However, universities still lack adequate coverage of ethics, even though most recognize it as a highly important topic. This study takes a look at ethics from the view point of the student. Through ratings of ethical scenarios, insight into student decision making in academic and industrial settings is gained. Students were asked to select a behavior from a 5 item ethical scale on 7 academic and 7 industry based scenarios that required questionable behavior.

PREVIOUS RESEARCH

Many credit Norbert Wiener as founding the field of computer ethics. In working on technological efforts for World War II, Wiener recognized that the impact of technology would transform society and that ethical issues would arise to challenge humanity. It wasn't until the 60's, that ethical issues in computing (such as computer crime) became popular. During the 60's Donn Parker, author of computer crime books (Parker, 1998), suggested the Association for Computing Machinery (ACM) adopt a formal code of ethics. Parker lead a special committee for the ACM that created an ethical code of conduct in 1973. In the 70s the term "Computer Ethics" was also coined by Walter Maner. Maner contributed ideas about defining computer ethics and about how to integrate ethics into college curriculum (Maner, 1980).

Maner's work inspired tremendous growth in research on computer ethics. Areas of interest include case studies, testing of behavioral models, surveys and ethical scenarios. In 1986, Richard Mason, described "Four Ethical Issues for the Information Age" (Mason, 1986). These were Property, Access, Privacy and Accuracy (PAPA) and have proved prophetic in describing many ethical dilemmas posed by technology in the years that followed.

Some research studies show comparisons of academic (student versus industry professionals) (Couger, 1989) with mixed results. Other studies focus on specific areas of ethics such as privacy or property. It is difficult to measure what students think they will do against what they actually do. Ideally, you would test their ethical values, apply a treatment (business education) and then test them again 5 years later to see if their taught values had an effect on their ethical decision making. This is a very difficult thing to measure. However, we can gain insight into ethical behaviors through the use of scenarios.

Scenarios are useful in measuring student and professional perception of posed situations. Scenarios help place the reader in 'the shoes' of a real person in a real dilemma. They make the reader a first person participant in making an ethical choice. For undergraduate students, this is appealing because they can test their choice in a benign situation. For example, if a student believes copying software is acceptable, implications of their choice (jail, higher cost of software, etc.) can perhaps education them into making better decisions. A person with no experience and training in ethical or legal issues may go into industry and make a bad choice out of ignorance. Having a chance to practice, will make them a better employee because they are better capable of judging the harm versus the good in an ethical decision.

METHODOLOGY

This study collected information from 93 juniors in an undergraduate business program at California State Polytechnic University, Pomona. All were Business Administration majors with an emphasis on Computer Information Systems. The survey was given to students in introductory and intermediate programming courses. Students were 84% male, 16% female on a campus with 55% male and 45% female. Campus ethnicity is 30.1% White non-Latino, 29.8% Asian, 27.4% Hispanic, 7.9% Filipino and 3.9% African American. Scenarios 1 through 7 gave ethical situations that a student might face on campus, asking them to express their reaction on

an experiential scale. The scale ranges from 'I would never consider doing this.' to 'I've done this.' Of course, students took the survey in complete anonymity. Questions 8 through 14 gave ethical scenarios that a professional would face in business, again offering the same scale. Some scenarios examined similar ethical issues contrasting academic and professional settings. The issues explored are property, privacy, etiquette, policy, access and accuracy. While etiquette and policy are not specific ethical issues, they are appropriate to confirming or denying behavioral norms in academia or industry.

Results were compiled and are reported as a percentage of people answering a specific way. Interpretation of results is broad, describing what was collected and comparing differences between academic and industrial scenarios.

Survey scenarios and frequencies of response are shown in Table 1.

RESULTS

The results of the scenarios are reported using descriptive statistics to examine the following categories of ethical scenarios:

- Property – Using source code or images that are not yours without compensating the originator.
- Privacy – Gaining access to someone else's information, without permission.
- Etiquette – Behavior that could be interpreted as rude, checking email or failing to attend training.
- Policy – Ignoring policy in order to get something done.
- Access – Giving unauthorized information or access to a friend.
- Accuracy – Lying about information.

	I would never consider doing this.	I might be tempted but wouldn't do it.	Not sure.	I'd do it if I knew I wouldn't be caught.	I've done this.
1. You are working on a project for a programming class. After meeting with a small group, you realize one member has copied part of your program and plans to turn it in as their own work. Will you turn them in even if it means they will receive an F in the course?	6 (7%)	17 (19%)	39 (43%)	17 (19%)	12 (13%)
2. You are in a Web development class that requires you to create a fictitious business Web page. you decided to do a page on selling beanie babies. You find a page done by someone else that you really like and discover that you can copy all their source code, change it to suit your needs and submit it as your project. Will you copy the code?	36 (39%)	38 (41%)	9 (10%)	9 (10%)	1 (1%)
3. You are in a class where the grades are posted on the Web using studen'ts ID numbers so that only the student knows their grade. However, the professor forgot to reorder the list. If you see an alphabetical listing of the students, you can find out everyone's grade. Would you do this?	42 (45%)	18 (19%)	11 (12%)	7 (8%)	15 (16%)
4. You are struggling to finish a programming assignment and cannot figure out how to get a critical function to work. A classmate is working next to your in the lab and has just proudly announced he got the program to work, and then asks if you will watch their books while they go to the restroom. Would you look at their code?	30 (32%)	36 (39%)	17 (18%)	4 (4%)	6 (6%)
5. You are in a class. The lecture is a little boring so, you decide to check your email. Would you do this?	12 (13%)	10 (11%)	4 (4%)	18 (19%)	49 (53%)
6 You and a friend are taking the same class. You attend the earlier section in the morning, while your friend takes the afternoon class. On the day of the midterm exam, would you consider telling your friend what questions are on the midterm?	23 (25%)	16 (17%)	19 (20%)	13 (14%)	22 (24%)
7. You are in a Senior project class, that is setting up an interactive database to record marketing survey information. The instructor for the class wants you to set up a server running IIS on the university intranet. However, you know it is against school policy to run IIS. Would you set up the server anyway because your instructor asked you to?	25 (27%)	9 (10%)	45 (48%)	12 (13%)	2 (2%)

Table 1. Ethical Scenarios in College and in Industry

	I would never consider doing this.	I might be tempted but wouldn't do it.	Not sure.	I'd do it if I knew I wouldn't be caught.	I've done this.
8. You are working on the company database containing everyone's employee records including management. Would you look at your boss's file to see how much he makes?	19 (21%)	24 (27%)	7 (8%)	29 (33%)	10 (11%)
9. You work for a Web development firm. You are creating a site that sells novelty and party merchandise. Naturally, many pictures are needed for the Web site. you find that another site has pictures of many of the items your site needs. After all, a picture of a Scooby Doo balloon is the same no matter what site it's on. Do you copy the graphics?	21 (24%)	20 (23%)	25 (28%)	15 (17%)	8 (10%)
10. You are eating your lunch in an office you share with a co-worker. You notice that your coworker has left their email open. The topics listed on the email are very curious and from your boss. Would you read the message?	52 (58%)	27 (30%)	3 (4%)	6 (7%)	1 (1%)
11. Finally, you got your big break. A managerial position has opened at a company you would love to work for. The problem is that the minimum educational requirement for the job is having an MBA degree. Would you list a MBA degree on your resume to have a chance at the job?	64 (73%)	17 (19%)	4 (5%)	3 (3%)	0 (0%)
12. You are attending corporate training for learning .NET. The training is in Las Vegas Nevada. After lunch, the training session is a little boring so you decide to ditch and go to the MGM Grand amusement park instead.	20 (23%)	43 (48%)	9 (10%)	15 (17%)	2 (2%)
13. Your company is about to report to shareholders that earning will be less than expected. Experts at your office agree that the stock price will drop 50%. A year ago, you encouraged your friends to buy the stock. Will you tell them to sell now?	18 (20%)	6 (7%)	33 (37%)	30 (34%)	2 (2%)
14. The company you work for has a policy that no unauthorized software will be installed on company machines. Your project is having difficulty with customer correspondence and keeping track of customer requirements. You found a program to help you manage this. If you go through proper channels, it may take 2 months before your program is authorized. Do you install your own version of the program?	19 (21%)	18 (20%)	23 (26%)	17 (19%)	12 (14%)

Table 1 (continued). Ethical Scenarios in College and in Industry

Property

Scenarios 1, 2, 4 and 9 shared the ethical issue of Property. Scenarios 1, 2, and 4 described situations in which students might copy or share information on assignments, gaining an advantage using something they did not create or own. Scenario 9, set in industry, described a similar situation where property was the ethical issue and an additional legal issue, copyright, was also apparent. Table 2 shows a summary of the results of the property scenarios.

	I would never consider doing this.	I might be tempted but wouldn't do it.	Not sure.	I'd do it if I knew I wouldn't be caught.	I've done this.
1 - academic	7%	19%	43%	19%	13%
2 - academic	39%	41%	10%	10%	1%
4 - academic	32%	39%	18%	4%	6%
9 - industry	24%	23%	28%	17%	10%

Table 2 Results of Property Scenarios

Student reported results indicate that most students recognize copying in an academic or professional setting is could be unethical. When only copying a portion of code (Scenario 1), the issue becomes less clear. Indeed, many faculty encourage students to work together, without copying but, find it a very hard thing to define for students. Surprisingly, student's reported copying code from a Web page (scenario 2) as a fairly unethical. In industry, professionals commonly copy code or use code libraries to figure out how to use new technology. Web development has a culture of sharing and learning where this is an accepted norm. Copying graphics (scenario 9), on the other hand, is illegal. Students saw this as unethical to a lesser extent.

Some implications for CIS curriculum may be learned here. In industry, copying a portion of code for calculating interest rate would be common. A programmer might use code from a coworker who developed a similar project. In industry it is reuse while in academe it is cheating. Explicit policy descriptions about what is acceptable can make this issue clear for students. In Web development courses, students often 'borrow' graphics to develop Web pages. This is done because students may not have cameras, time or the graphics capability to develop their own materials. The downside is that students fail to gain an understanding or appreciation of the effort and cost for graphics development. Using a text with 'canned' graphics materials can lack creativity for student Web page development and forcing students to collect their own graphics may be time consuming. Academic and legal lessons are rich in this area. Every Web site has a policy posted on use of its graphic and textual materials. Covering copyright law in Web development courses is also a necessity for students entering industry.

Privacy

Scenarios 3 described an academic instance of privacy, figuring out other student’s grades. Scenarios 8 and 10 described industrial cases where privacy was the issue, figuring out coworker’s pay and reading a coworker’s email. Table 3 shows a summary of percentages of the privacy scenarios.

	I would never consider doing this.	I might be tempted but wouldn't do it.	Not sure.	I'd do it if I knew I wouldn't be caught.	I've done this.
3 – academic	45%	19%	12%	8%	16%
8 - industry	21%	27%	8%	33%	11%
10 - industry	58%	30%	4%	7%	1%

Table 3 Results of Privacy Scenarios

Predominantly, students reported that they would not consider, though they might be tempted, invading someone’s privacy by figuring out personal information. The exception is, knowing what a coworker’s salary is. What professional hasn’t been curious about this? 33% of students reported that they would look at employee records to figure out their bosses pay if they knew they wouldn’t get caught. Perhaps curiosity and viewing one’s boss as an outsider to labor are too big of a temptation. A person wishing to advance may see themselves as someday taking the position of or a position similar to their boss. Putting themselves in that spot, they may say “I can to that.” and further, if I did that, “How much money would I make?”

Etiquette

Scenarios 5 and 12 described issues of etiquette. Scenario 5 involved checking email during a lecture. Scenario 12 described missing a professional conference to have fun. Table 4 shows a summary of percentages of the etiquette scenarios.

	I would never consider doing this.	I might be tempted but wouldn't do it.	Not sure.	I'd do it if I knew I wouldn't be caught.	I've done this.
5 - academic	13%	11%	4%	19%	53%
12 - industry	23%	48%	10%	17%	2%

Table 4 Results of Etiquette Scenarios

While faculty lament student’s checking their email in class, over half of the students reported that they have already done this. While not an ethical issue, this issue of etiquette is a sore point for faculty. A student perspective may be that they are multi-tasking and maximizing their

productivity. The faculty perspective is that students are disrespectful and lack listening skills. What employee would check their email during a design review or staff meeting?

Again, this may be an opportunity to prepare students for industry by adding etiquette into curriculum. No one teaches a student to ignore a ringing phone if someone is in their office. However, a professional that does not do this may be perceived as rude. Similarly, a professional who is late is seen as poorly organized and unreliable. We naturally instill a sense of timeliness for our students by requiring them to be on time to class. Teaching them to keep their email and cell phones in-check may also instill a kind of professionalism into their behavior.

Only 2% of the students surveyed reported that they would attend the amusement park instead of the training. This shows a recognition that their employer paid for their training and intended for them to be there. It indicates that they may make a distinction between academic and professional settings when it comes to behavior.

Access

Scenarios 6 and 13 described issues of access. The academic scenario describes a case where a student in an earlier section tells a friend what is on an exam. The industrial scenario describes insider information on a dropping stock. Table 5 shows a summary of percentages of the access scenarios.

	I would never consider doing this.	I might be tempted but wouldn't do it.	Not sure.	I'd do it if I knew I wouldn't be caught.	I've done this.
6 - academic	25%	17%	20%	14%	24%
13 - industry	20%	7%	37%	34%	2%

Table 5 Results of Access Scenarios

While the scenarios are highly complementary, results indicate a clear distinction from an academic versus an industrial setting. Only 2% of students reported that they would tip off friends to a stock drop, while 24% gave exam information to fellow students. 34% of students reported they would tell friends about the stock drop if they knew they wouldn't be caught. The scenario is written in a way that the person may feel responsible for the investment made by friends. So perhaps this is why the reporting is so high. This may also indicate a demographic result in that when you are 20-something, your peers are very important to you. It is disturbing to see that 37% of respondents were 'Not Sure', even though this is a highly illegal thing to do.

Policy/Access

Scenarios 7 and 14 describe issues related to Policy and Access. In the academic scenario, a student is told by an advisor to ignore University policy. In the industrial scenario, the worker is asked to illegally install software on owned computers. Table 6 shows a summary of percentages of the Policy scenarios.

	I would never consider doing this.	I might be tempted but wouldn't do it.	Not sure.	I'd do it if I knew I wouldn't be caught.	I've done this.
7 - academic	27%	10%	48%	13%	2%
14 - industry	21%	20%	26%	19%	14%

Table 6 Results of Policy Scenarios

Responses across the academic and industrial scenarios were remarkably similar. Again, the percentage of “Not Sure” respondents seems quite high. This may be because they received contradictory direction from two authority sources. However, in industry stakeholders are often at odds with each other over resources and politics. While the Information Technology department would like everyone to own the same hardware and software, end-user’s want custom machines with their own idiosyncratic applications. It is not uncommon to see user’s thumb their nose that this kind of policy. That students are “Not Sure” is an indication that they lack training in how to justify and make a political decision; this is just what they may be asked to do at their future jobs though.

Accuracy

Scenario 11 describes lying on one’s resume to be considered for a job that they really want. The person says that they have an MBA degree, when they do not. Table 7 shows a summary of percentages for this scenario.

	I would never consider doing this.	I might be tempted but wouldn't do it.	Not sure.	I'd do it if I knew I wouldn't be caught.	I've done this.
11 - industry	73%	19%	5%	3%	0%

Table 7 Results of Access Scenarios

Interestingly, no one said “I’ve done this” and very few reported a desire or lack of clarity on this issue. Perhaps this is because, for students, it was viewed as an outright lie. No gray area existed as to whether the person had the degree or not. However, a student seeking first time employment would almost be expected to embellish their resume, claiming they ‘know’ Java, even though they took only one course.

DISCUSSION AND ANALYSIS

We have noted that our research sample contains a high proportion of male students. We would not be surprised to learn that the results contain a significant degree of gender bias. Male students may be willing to take higher risks and are more willing to cross ethical boundaries than their female peers. Future research in this area will attempt to collect demographic information.

Other weaknesses in this study include the scale to which the students replied. The answers, such as “I’ve done this”, are not a continuum of a student perception. Creating a range from very unethical to completely ethical in a Likert type scale will allow us to look more critically at student averages and variances. This paper reports their experiences in raw percentages.

Within the Cal Poly College of Business curriculum ethics is a required component in many of the courses. It appears however, that despite repeated discussion, students appear to be highly uncertain about what would be ethical in a particular situation or unconvinced of the value of their ethical behavior to society or themselves. It appears that having an ethical focus in the curriculum is important but having it as one topic among many in a course means it doesn’t get the emphasis it deserves.

Many of the questions in our research instrument involve the use of information technology. We have observed that information technology exacerbates and creates ethical problems and creates many new ones. We suggest that students majoring in information technologies might benefit from a specialized course or seminar relating specifically to situations arising from information technology use and access.

FUTURE RESEARCH

The simplicity of our survey instrument raises questions about how demographic characteristics are biasing the data. In the future, we plan to include several questions that capture some demographic data such as age, gender, work-experience, country of origin and length of time in the country.

We are also very curious about how the students’ responses would differ from people who actually work in business. Recognizing that distrust could significantly bias reporting if the study was conducted “on-the-job”, we nevertheless believe that surveying the ethics of people in business could provide meaningful insight, particularly with respect to where people believe the line is drawn between ethical and unethical conduct and how close they are willing to come to that line.

CONCLUSION

This paper reports the opinions of upper division, information systems students regarding specific ethical scenarios with core issues in academic and industry environments. Findings indicate that in most cases, the ethical value held at the University is one that is perceived to hold true in industry. However, it is also of interest, how many students are “Not Sure“ what decision they would make in many of the scenarios provided. Perhaps this is an indication of the need for students to become more aware of the ethical dilemmas and rationales for decision making, in the classroom. Students are vague on specific areas because they lack experience, and because no clear policy or argument has been posed to influence their behavior. Bringing ethical problems that students encounter into the curriculum and then drawing parallels to industry can help a student practice academic and professional ethical standards.

While maturity and experience do change behavior, we think it is safe to assume that students take many of their core ethical values with them to their jobs. Since we have seen that

relationships appear to bias ethical decision-making, company culture and the behavior of managers and leaders can be expected to significantly affect how an individual will respond in any given situation. Firms whose success is based on reputation would do well to develop policies for behavior and action that are consistently followed from the boardroom down to the mail room.

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