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TEACHING IS ETHICS: APPLYING A RESEARCH TECHNIQUE FOR CLASSROOM USE

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Abstract:
The nature of IS technologies and the range of appropriate and inappropriate uses continues to evolve and expand. Providing appropriate classroom content to introduce students to classic information ethics problems as well as methods for analyzing possible actions within a challenging situation are difficult and important to provide in MIS educational programs. This research paper describes the application to educational activities of a research technique pioneered by Donn Parker using scenarios and Likert scale values choices pertaining to IS ethical issues. The recommended method for application in the education setting is described. Key findings in terms of ethical themes that permeated surveys and discussions by students are also presented and discussed.

Keywords: IS ethics, IS privacy, IS values, business scenarios, ethics education

I. INTRODUCTION

This paper describes a classroom exercise that creates lively discussion and increased awareness regarding issues of ethical use of information and information systems. Essentially, this classroom exercise is built on an approach toward investigating values and norms pertaining to ethical judgment regarding behaviors that involve use of information systems.

Donn Parker (1968) pioneered the use of business scenarios for research purposes. He investigated the relative appropriateness of a wide range of information systems related tasks. He contrasted the views held by IT professionals, faculty, and students. While many of the specific scenarios are a bit dated due to the evolution of technology, the concept is still strikingly effective at assessing issues in various situations. Many authors have followed with various refinements to the investigative technique (see for example Ellis and Griffith, 2001).

The unprecedented evolution of information technology challenges many aspects of traditional ethical thinking. At its most basic, information technology creates opportunities for behaviors or for the extension of behaviors that are not otherwise practical. Information technology, for example, allows the near instant spread of embarrassing, scandalous, and libelous information content regarding individuals (which may or may not be true). Once information is published on the Internet, it may be irretrievably held in countless places and, as a result, never fully expunged from accessibility for those who seek it out. Public issues regarding information appear almost daily in news outlets. As one author writes this paragraph, Google has just been “convicted” of malfeasance for allowing a video to be posted and viewed that is deemed demeaning and invading the privacy of an individual in Italy (February 25, 2010). The issue pertains to whether the conveyor of information is responsible for distributing or making available unacceptable content.
The importance of teaching ethics regarding information systems is well documented for MIS and computer science majors. Many articles have been written on this topic, including studies of the content of courses as well as whole academic programs dedicated to this topic. Other studies target particular approaches to delivery of such content. We would argue that with the pervasiveness of computing in society in general and throughout business, sensitivity to the ethical issues wrought specifically by information and information systems is of relevance to all business students, perhaps all citizens.

This paper presents an approach that can be used with either MIS majors or with general business or non-business students. It focuses on scenarios that can apply to any individual, rather than focusing on those specifically faced by MIS professionals, such as informing management when projects fall behind. Discussion with MIS students can focus on the results of their decisions and actions, whereas discussions with more general business students can focus on appropriate use of information and related technology in society. Results of pilot use of this classroom exercise with two sets of general business students will be discussed in a later section of this paper.

One of the difficulties in teaching ethics is the lack of unanimity in defining what ethics is and lack of consensus regarding a focus on creating greater awareness or effecting behavioral change. The importance of creating broader understanding is the presumption that such understanding will lead to more ethical behaviors. However, there is a leap of faith regarding what exactly the understandings are that come from much ethical coursework and whether such understandings are used or are useful when introduced into live situations. Issues with changing behavior include a lack of consensus on which behaviors are best in which circumstances. Perhaps in some highly well defined situations, the morality of given behaviors is clear, but in many situations involving information and ethical decisions, the moral agent must act with limited information, time constraints, uncertain personal consequences, and different “payoffs” for different stakeholders. For example, we generally positively value both security and privacy. Should the privacy of an individual who may have a problematic disease outweigh the security of a medical staff needing to interact with her or him? Two positive values are set in opposition to one another. When examined this way, the answer tends not to be clear in its morality, but rather a forced judgment among imperfect alternatives.

This classroom exercise combines the research/investigative techniques of Donn Parker and those who have followed, with a loosely interpreted rendition of value clarification activity presented in an experiential education manner.

II. ETHICS AND IS ISSUES

Smith (2002) provides a broad philosophical approach for consideration of ethical questions in MIS. These bases are: the traditional philosophical view that considers “rule-based” versus “consequentialist” approaches to ethics. The rule based would suggest that actions are ethical if they conform to a set of conditions and are applicable by contrasting the possible action against this set of standards. The consequentialist would counter that the correctness of the action will depend on what results from it. Smith (2002) further provides three linkages for resolving MIS ethical quandaries – the stockholder perspective, the stakeholder perspective, and the social contract perspective. These attempts to balance pre-existing codes with effects of actions based on the varied perspectives of those who might be affected.

It has been argued that ethical behavior follows from understanding behavioral standards and norms (Conger and Loch, 2001). This is reinforced by Goles et al. (2006) who further maintain that understanding of “moral intensity” leads to better understanding of the “consequences and implications” of actions in situations with ethical connotations. While it is possible that some positively ethical behavior will simply be random or extrapolated from norms and standards pertaining to unrelated contexts, it does seem logical that behaviors more consistent with ethical norms will follow from greater understanding of the group’s norms and standards. Variations on this latter would distinguish expected consequences from those that are actualized. Clearly
information about those actualized are not available when the action is being considered and decisions are made as to whether or not to undertake said action.

Conger and Loch (2001) categorize four areas of information ethics concern: ownership, responsibility, privacy, and access. Ownership pertains to various aspects of intellectual property and allocation of rights to own, use, and profit from information. Responsibility pertains to the stewardship of information both in the workplace in terms of building suitable tools and more generally to the holding of others’ information. Privacy pertains to limitations for others in the collection, storage, and use of information about individuals (with and without regard to who technically “owns” the data). For example, doctors may collect health information and “own” data about a patient, yet be ethically and legally limited in what they may or should do with that information. And access refers to the fact that society in general operates in many ways based on information and discrimination in who is allowed to access that information creates significant differences in access to much that is (or should be) in the public domain.

Ellis and Griffith (2001) consider particular scenarios from three distinct perspectives – what they call moral equity, relativism, and contractualism. These refer to behaviors in terms of their fairness, the cultural or group acceptability, and whether or not they conform to more specific agreements. These dimensions are derived from prior ethics literature. In their study, Ellis and Griffith (2001) show that these aspects of ethics are not necessarily additive in all situations, but rather in some cases may be independent such that a case may be highly fair yet not culturally acceptable or vice versa.

Goles et al. (2006) characterize moral intensity in terms of six factors. These are: magnitude of consequences, probability of effect, temporal immediacy, concentration of effect, proximity, and social consensus. Similar to Ellis and Griffith (2001), this study shows that moral intensity varies by situation (as one would expect). Their detailed findings show that these six factors do not move in the same direction across scenarios. As magnitude of consequences increases, probability of effect may decrease, for example. They also show a strong correlation between moral intensity as the combination of these variables and behavioral intention.

III. EXERCISE MECHANICS

Planning. Of course the exercise requires some preplanning. At a minimum the instructor should become familiar with the scenarios and generally have a prioritization of which are of most interest to discuss. Some time should be allocated for printing survey questions in adequate numbers of one per student; however an enterprising instructor where all students have access to computing, say in a lab or where laptop computers are required, might experiment with having the questionnaire on-line. Using some online surveys, however, it is difficult for the respondent to return to questions or sections once they have been completed. This would be potentially problematic in later discussion phases if students do not have access to their judgments and comments.

Surveying. The instructor should distribute the printed surveys to all students and ask them to render a judgment for each scenario. For each scenario, students are asked to judge the appropriateness of the behavior on a scale from one to five anchored by “completely acceptable” to “completely unacceptable”. In addition, students have the opportunity to indicate what change in circumstances might influence their view of the situation. This is an important element of the exercise because it helps surface issues that are only implicit in the scenario. These issues include consideration of the ultimate harm or lack of harm from the decisions, who is or is not responsible, and what alternatives there might be to the actions selected. The individual completion of the questionnaire is important so that each student has an opportunity to think through each scenario rather than simply and quickly accepting someone else’s opinion.

Discussion. Following the students’ completion of the survey, the instructor has a number of options. The key factor in planning for the discussion segment is how much time the instructor
has available. In a typical 60 minute class, accounting for 15 minutes of introduction and survey completion, this leaves about 45 minutes for discussion.

One approach is generating a strong discussion is to get students to consider the questions first in small groups. Students form groups of 2 or 3 members then compare answers to all or a selected subset of questions. Where they agree, they may go on to the next question, where they disagree with one another, they should each compose a rationale for their position. They may accept one student’s argument find a compromise or “agree to disagree”. The strength of this portion of discussion is that it allows each student to verbalize her or his views and to see directly what counter arguments there might be. By having each student begin by individually assessing each scenario, the process is more likely to trigger variance in answers and, thus, more room to explain answers and generate discussion.

It should be noted that many students will be surprised by the amount and nature of variance in the answers. This is an important point – people sometimes are not aware that collectively we represent many different perspectives. It is a good strategy to begin more general full class discussion by asking how many groups agreed regarding all answers to all questions. The answer, likely, will be none. It can be instructive to check how many questions each group did have agreement on. Ask each group to count those with agreement, then count off how many with one, two, three, and on up, perhaps marking on the chalkboard the count for each total. The instructor can follow up by asking simply what accounts for so much variance.

Following the paired discussion, the instructor may address one or all of the questions (depending on time and individual interests). One approach to starting such a discussion is by asking for a show of hands for each of the five numbers on the Likert scale for a particular question. It is normal for there to be a great deal of variance. In our pilot study, the standard deviation was approximately 1 on a scale of 5 for all questions. This is another opportunity to address the likelihood that there is less agreement and fewer people taking their same point of view than students may expect. We like to call on a student who voted “totally acceptable” regarding a scenario to explain that perspective; then to call on another student with a “totally unacceptable” vote to counter with their arguments. At this point we often find other students wishing to comment. The instructor may list arguments on the board or simply allow for oral discussion. When comments begin to repeat or wind down, it is a good time to note some more general concepts pertaining to the particular question. Given enough time, such discussion can be repeated for a number of scenarios.

IV. PILOT TEST METHOD

A pilot test of the applicability of this approach was conducted using two classes each with a different instructor. One of the classes is called ‘business 100’ and serves as a general broad view of a business curriculum and is designed for freshmen likely to major in business administration. The other class was “MIS 200” a broad required introductory course in MIS for all business majors. Generally there are 15-20 students in business 100 sections and 30-50 in MIS 200 sections. No striking differences were noted in the performance of students between the two courses. In each course, the surveys were administered, classroom discussion followed, and surveys were collected. Completed surveys were examined quantitatively to contrast the average evaluation and standard deviation contrasting the various scenarios. Qualitatively, data supplied by students as remarks for each question were transcribed and categorized using open coding techniques.

Prior to use as a classroom exercise, the survey protocol was processed by the university’s Institutional Review Board, such that survey information could be used for both teaching and research purposes. At our university, this process used only for teaching would not need approval by the IRB, however, it would need approval for publication in any form.
V. RESULTS

In our pilot study using this scenario approach to examine information ethics, some of the considerations that were noted by students in regard to deciding how to view a particular question recur among several questions or among several students. We view these as key lenses through which students interpret the cases and assign ethical judgment. It is clear that quite a few of these basic ethical issues are largely not specific to information technology questions, but rather seem pervasive regarding any kind of ethically uncertain decision making. Instructors may focus on one or more of these themes in follow ups to student discussions on particular scenarios. The major themes are discussed below.

Is there economic gain involved? Students make a distinction in some cases between actions that are taken for the purpose of gain versus those that are apparently taken without economic gain. It is not clear if they view economic gain differently from avoidance of economic loss. For example, if I take software belonging to someone else and sell it; that may be viewed differently from use software belonging to someone else in order not to pay for it. Following Tversky and Kahnemann’s research regarding asymmetric attitudes toward risk in gain versus loss situations, we might expect differing attitudes where gain is involved in contrast to where avoidance of loss is involved.

Are there personal risks? What are the chances of getting caught/punished? Perhaps it is not an “ethical” issue per se, but student attitudes toward what they would and would not do are influenced by the potential for “getting caught” and the consequences if caught. Logically, actions are ethical without regard to consequences, but the degree to which behavior is guided by ethical consideration may vary greatly with the perceived level of personally risk.

Is someone else taking responsibility? Is the action commonly accepted? Although this was not a recurring theme, it is interesting to consider the effect of individual versus group behavior relative to the situation. There are logically actions that I might take in support of someone else’s decision that I might not take if the decision is my own. People may look for leaders who are greater risk takers as a way to act consistently with their preference, but avoid or have the illusion of avoiding responsibility. This is perhaps related to questions of getting caught. We frequently see the ‘leader’ of misbehavior punished more severely than the “innocent” one who is just following along. This also raises questions about how strict one is in one’s own personal behavior versus in judging others. In some scenarios some people will judge others harshly for what they themselves would do; in other cases it is the reverse, people will be forgiving of actions one would be very reluctant to take themselves.

What prior relationships and understandings are involved? Are there standard policies? What are the specifics of the contract/agreement? In some cases, the ethics of a situation may revolve around not only present actions, but also what promises are made and what expectations have been added to a generic situation. Perhaps, some of the scenarios are incomplete enough that whether or not actions are based on fulfilling promises (even when to one’s cost) are justified where they may be unnecessary if no prior arrangements were made. The domain of promises and promise breaking is an interesting one for exploration. What constitutes the enactment of a pledge and what fulfills it? For example, if person a makes a statement that person b interprets as a promise, at what point is person a committed to that action? If one person’s actions are not absolutely in conformance with the expectations of another person, at what if any point is the promise kept and fulfilled?

Does the action do any harm? In a broader sense, this is a question regarding the consequences of the action. Can we judge an action by its consequences? At what point do we know enough about the consequences to make such judgment? Do we ever have situations with 100% clarity regarding the consequences? How do we deal with residual uncertainty regarding consequences? It is clear that the same action where harm results versus where no harm results, would elicit different judgments from some of the students. But the definition of “harm” may be difficult to pin down. If one looks at private medical records, even if no action follows up to the detriment of the ‘patient’ was there harm in the privacy lapse itself?
Are there alternatives (and what is their cost)? In the literature on crises and groupthink, it is proposed that in times of urgency, decisions are made more quickly and fewer alternatives are typically considered. Some students seemed to think that if there are fewer alternatives, some behaviors may be more acceptable. It does, though, raise the question of "real" alternatives versus "perceived" alternatives. Philosophically, I am hard pressed to think of a situation where there are no alternatives, but many people limit themselves or are not creative enough in a particular situation to see alternatives. Moreover, not all alternatives have the same costs or benefits. One may perceive alternatives of such cost that they appear to not be alternatives at all.

Is the action against the law? We may view ethics as separate from the law, but the nature of the law sends strong signals about what is ethical or at least what is allowed. This point clearly is related to the consequences of the behavior. Of course another view is that some actions are ethical, but if they are illegal, that is another reason not to engage in them. It is also related to whether the action is commonly accepted. For example, driving above the speed limit is commonly accepted and most people accept the small risk of a speeding ticket for other benefits such as getting home from work sooner.

What are the individual’s intentions? What are an individual’s responsibilities to prevent or investigate potential harm? In judging the level of ethics of other people’s actions, it is relevant what they intended. If one is aiming at a positive end but the means go awry, perhaps there is some mitigation for harm done that there wouldn’t be if the original ends were purposely unethical or harmful.

Are the rules or policies intelligent (why are they in place)? Since Thoreau, we have had a stream of thinking that bad rules ought not to be followed. Of course there are varied thoughts on the obligation to take legal responsibility for breaking such laws. On a narrower focus, it might be ok to cheat or do plagiarism on a "stupid" assignment but not on an "intelligent" one.

A few other points are perhaps more specific to information and information technologies. Is it different to take written ideas versus to remember and recreate them? Is the data public or private (are there alternate sources?) Is the data accurate (changed by hackers?) Whose responsibility is it to make sure the data is accurate? Who should pay for the accuracy of data? This assumes an information supply chain. One individual or group may collect it, another store it, another retrieve it, and another interpret and apply it. Where is the responsibility in that sequence? We see with Sarbanes Oxley an effort to enforce the whole supply chain through responsibility to the corporate leader.

VI. CONCLUSION

Without some kind of summary or wrap up at the end, this exercise can seem open ended and even pointless to students. One strong ending can be to reference Mason’s approach to analysis of an ethical quandary and illustrate how it might apply to a particular scenario.

Mason (1995) in introducing a special issue of the Communications of ACM on ethics in information technology discusses four factors that describe the “facts” of an ethics challenging situation. These are: identifying the moral agent, noting alternative courses of action, defining expected results, and identifying the stakeholders potentially affected. Such a model can be very helpful for sorting out the intellectual content of a challenging situation. Students may find it difficult at times to be clear about which individual’s behavior is in doubt. Noting alternative courses of action may suggest acceptable or even optimal possibilities that were not immediately considered. This is generally a good action for people thrust into difficult situations. Defining expected results and considering stakeholders may or may not reveal a clear “net benefit” from taking one alternative over another, but it does make clear and explicit the nature of the choice. Given a particular instance some might favor say the right of doctors to know potentially hazardous conditions of their patients over the privacy of the patient, or vice versa. Explicitly accounting for the costs and benefits likely to result from various possible actions to each
stakeholder allow for a higher level discussion of the rights and responsibilities of stakeholders as well as the decision-making of the particular moral agent.

By showing the use of such a method in the context of particular scenarios, students receive a powerful tool that they might also use when they find themselves in decision making or action taking situations.

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I.

LIST OF REFERENCES


ABOUT THE AUTHORS

Fred Niederman serves as the Shaughnessy Endowed Professor of MIS at Saint Louis University. His doctoral degree and MBA are from the University of Minnesota in 1990. He also has a BA degree in English literature from the University of California, Santa Barbara, in 1973. His research interests include global information management, MIS personnel, and using MIS to support teams and groups. Recently he has been investigating the integration of MIS functions after corporate mergers and acquisitions. He is a strong proponent of grounded theory and theory building as a way to enrich the MIS discipline and build intellectual content customized specifically to our field of practice. He serves on editorial boards for JAIS, CAIS, Human Resource Management Journal, Journal of International Management, and the Journal of Global Information Management. He is an active member in the ACM special interest group on MIS and former chair of the special interest group on computer personnel and is a founding member of the AIS special interest group on grounded theory. He is currently serving as co-program chair for the 2010 ICIS conference in St. Louis, Missouri, USA.
Sallie Taylor is an adjunct instructor at Saint Louis University. She has an MAT in Mathematics and an MS in Computer Science from Indiana University, Bloomington. Sallie also holds BA degrees in both Russian and Mathematics from the same. She has over 20 years of teaching experience and has interests in teaching problem solving approaches and learning strategies for students identified as being at academic risk. Sallie also works as a software engineer in the financial industry and shares Dr. Niederman’s interest in system integration during corporate mergers.
APPENDIX 1. Student Information Ethics Questionnaire

1. a. You have been assigned a homework problem that requires the use of a particular commercial software program. Your roommate has a copy of the software and offers to install an unlicensed copy on your PC. Installing the software is

On what additional circumstances might it depend?

1. b. Your employer has asked that you install software on 50 company owned computers. You know that the company owns only 40 licenses for the software. You bring this discrepancy to the attention of your boss and are told that an audit by the software vendor is unlikely and that you should proceed with all installations. Installing the software is

On what additional circumstances might it depend?

2. A client of your company mentioned a movie that interests you during a lunchtime business meeting to discuss progress on his recent work request. You cannot recall the title of the movie and use the company’s address book to find the email address and cellular telephone number of the client, so you can make the inquiry. Accessing the client’s information for the purpose of requesting this information is

On what additional circumstances might it depend?

3. An apartment owner declines to rent you an apartment, as the credit service he subscribes to reports that you sued a prior landlord for withholding your deposit. Though you inform the apartment owner that you have never been a party to such a lawsuit, he refuses to repeat the credit check using a different credit service. The apartment owner’s response is

On what additional circumstances might it depend?

4. Your roommate is interested in the computer programming techniques used to generate computer viruses and tells you that he is experimenting on computers in University owned computer labs to confirm his understanding of the programming methodology. You do not believe your roommate has any intensions of harming the University computers. Your roommate’s behavior is

On what additional circumstances might it depend?

5. Employees of a medical device company are being laid off after a recent company merger. A lead contributor to many innovations within the company expects to be laid off and copies
designs and research findings for devices that are predicted to have applications to patients pending additional research. This employee's behavior is

On what additional circumstances might it depend?

6. Your company's policy related to asset usage states that no employees may use organizational computers for any purpose other than performing business tasks.

a. Some staff members continue install and play innocuous games, such as Solitaire and Tetris during their lunch time and 'slow-times.' The behavior of these staff members is

On what additional circumstances might it depend?

b. Several students from a local university have unpaid internships with the company and complete homework assignments between company work assignments. The behavior of these students is

What if the internship is paid?

On what additional circumstances might it depend?

c. Several employees, who are parents to young children, access the school web pages of their children to monitor homework assignments, dates of quizzes, exams, and athletic schedules. The parents' behavior is

On what additional circumstances might it depend?

7. You work on the database system for the human resources department of a large, 100,000 plus employee, publically traded company. You have access to salary and other vital data of all past and present employees of the company. You suspect that the company pays female employees with similar experience less than males employees and have the access and knowledge to analyze whether your hunch can be statistically demonstrated. Using your access to the databases to confirm or refute your hunch is

On what additional circumstances might it depend?

8. A coworker is disliked by many people on your team at work, including you. After a simple Google search on the name of this employee, you discover that he is selling his car on Craig's list and is attempting to sub-let his apartment. You conclude from this and other information that your coworker is planning to resign and move to a different area. If this coworker leaves the company, it is likely that you or another employee will be promoted into his position. You mention your findings to your team-leader during a monthly one-on-one meeting, citing your reason as 'You hope that the information will allow him additional reaction time in the event your coworker leaves.' You additionally hope that
providing this information will make you more likely to be promoted if your coworker leaves. This behavior is

On what additional circumstances might it depend?

9. Your mother-in-law has dementia and sometimes writes checks before there are adequate funds for them to clear. You work at the bank where she holds her account and check her account daily to determine if there are overdrafts. When necessary, you adjust dates or amounts, but only until her monthly social security check is deposited and there are funds to cover her expenses. This behavior is

On what additional circumstances might it depend?

10.a. A coworker has been in poor health recently. Though he has missed many days of work, he is not providing many details about his illness to his coworkers. You do know that he is receiving treatment at a local hospital where your wife/husband works. You would like to know more about the situation and ask your wife/husband to determine additional details. Making and filling this request is

On what additional circumstances might it depend?

10.b. You search the Internet for information about the above person and discover that he regularly posts to a support group for people with terminal cancer. You do not plan to do anything with this information. Searching for this information is

On what additional circumstances might it depend?

11.a. A layoff, effective immediately, is occurring at the company where you work. You are not affected, but after all affected employees have been notified, you write a script that accesses the e-mail system to identify which e-mail addresses have been retired, thus allowing you to determine which employees were laid off. This behavior is

On what additional circumstances might it depend?

b. You forward the list of affected employees to coworkers within and friends outside of the company. This behavior is

On what additional circumstances might it depend?

12. A friend of yours does not have health insurance and can no longer afford the prescription sleeping aid he used while insured. He asks you to complain of difficulty sleeping to your physician so that you can obtain a similar prescription under your company’s prescription drug coverage. Making/Honoring this request is

On what additional circumstances might it depend?