Teaching IS Ethics: Applying A Research Technique For Classroom Use

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ABSTRACT

The nature of IS technologies and the range of their appropriate and inappropriate uses continue to evolve and expand. MIS educational programs have a challenge to provide both the appropriate content to introduce students to classic information ethics problems, as well as the methods for analyzing possible actions within a complex realistic situation. 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: Active learning, curriculum design and development, ethics, experiential learning and education, introductory course, pedagogy, scenario based design, student attitudes, student responsibility

1. INTRODUCTION

This paper describes a classroom exercise that creates lively discussion regarding issues of ethical use of information and information systems. 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 IS ethics research purposes. He investigated the relative perceived appropriateness of particular actions regarding a wide range of information systems related situations. He contrasted views held by IT professionals, faculty, and students. Parker used the scenario technique for contrasting the ethical values of different categories of stakeholders. In contrast, we are applying the technique in the classroom for eliciting ethical thinking from students for the purpose of allowing them to contrast and compare their views. As a byproduct of this technique we receive a substantial amount of data regarding student views on various issues. We use this data to illuminate the students' understanding of the issues and to provide feedback for instructors to allow stronger background knowledge for leading these discussions. Others have followed with various refinements to this technique in research applications (e.g. Ellis and Griffith, 2001), however we are not familiar with

anyone who has modified it for use in the classroom.

The unprecedented evolution of information technology (IT) challenges many aspects of traditional ethical thinking. IT creates opportunities for the extension of face to face behaviors into an electronically mediated environment. For example, the experience of "bullying" has recently moved from the school playground to "cyberspace" (e.g. National Crime Prevention Council, 2011; New Zealand Cyberbulling.org, 2011). IT enables 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. Public issues regarding information appear almost daily in news outlets. Google in Italy was convicted in 2011 of malfeasance for allowing a video showing a handicapped child being bullied to be posted and not removing it for months after it was reported (February 25, 2010). The particular issue pertains to whether the conduit of information, Google, is also responsible for unacceptable content.

The importance of ethical behavior among MIS personnel results from interacting with the storage, processing, and presentation of data and information that may affect people's lives in a wide variety of ways. Woodward et al. (2007) provide many arguments regarding the critical nature of ethics for MIS personnel. Further they show for a sample of students the relationship between ethical decision making and reasoning, leading to a call for both more research into the state of MIS students' ethical processing and manner for conveying processes and content pertaining to ethical decision making and reasoning in the classroom. We would argue that with the pervasiveness and ubiquity of computing in society in general and throughout business, sensitivity to the ethical issues wrought specifically by information and information systems is of relevance not only to MIS majors but to all business students, perhaps to all citizens. For example, the recent collapse of the 'News of the World" has reminded us the importance of ethics in journalism (van Onselen, 2011).

In this paper we present an approach that can be used with 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 IT in society.

One of the difficulties in teaching ethics is the lack of unanimity in goals for such teaching. For some the goal should be to create individuals who will behave more ethically after entering the business world, to others it is the less ambitious goal of providing more awareness and tools for analyzing situations with potential ethical issues. Perhaps in some well-defined situations, the morality of given behaviors is clear, but in many real life complex situations involving information, technology, business practices, and ethical decisions, the moral agent (individual or group) frequently acts with limited information, time and other resource constraints, uncertain personal/corporate consequences, and different expected "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 or tradeoff 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 as an experiential education activity.

2. LITERATURE REVIEW

The literature on ethics includes among other things discussion of the categories of situations that draw forth ethical issues in IS (e.g. Mason 1986), presentation of bases for ethical decision making (e.g. Mingers and Walsham, 2010), and others that describe processes for engaging IS ethical issues (e.g. Mason 1995) (see Table 1). We will briefly outline some key concepts that helped guide our design for this study.

Mason (1986) uses the acronym PAPA to define issues of privacy, accuracy, property, and accessibility. Privacy pertains to decisions and actions regarding what information individuals should be required to disclose. Accuracy pertains to the burden of users and holders of information to insure that that information is correct. Property refers to ownership of knowledge and protecting its use by those who are unauthorized. Accessibility refers to societal obligations to provide access to information where appropriate and with equity. Similarly, Conger and Loch (2001) categorize four areas of information ethics concern: ownership, responsibility, privacy, and access. We find these to be closely aligned with Mason's categories where ownership and property refer to similar sets of issues; and accuracy is perhaps subsumed under the broader notion of responsibility which might further apply to appropriate manipulation, integration, and application of information, particularly as it applies to clients and other stakeholders. We used these types of situation to guide our writing of scenarios for use in classroom exercises to be discussed below.

For guiding discussion in the classroom, we use both philosophical and ethical bases as applied to IS and a methodology by which individuals may use to address such issues when they arise in their personal experience. Mingers and Walsham (2010) review philosophical underpinnings of ethics highlighting the challenges of consequentialism (judging behavior based on its consequences), deontology (considering the character of actions inherently without consideration of consequences), and virtue ethics, the concept of striving for a full and complete life and, thus, evaluating behaviors with consideration of their context. This study further discusses the informational structure realism of Floridi (1999) and discourse ethics based on early work by Adam Smith (2002, 2008). A complete discussion of these approaches is outside the scope of this paper, but should be reviewed by teachers considering leading discussion of MIS ethics with their students.

Smith (2002) provides a similar but slightly different

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. As an example, consider two drunk drivers smashing into other cars. In one case the other passengers walk away unharmed, in the other case the passengers are killed. For the identical actions and decisions, the consequences can be substantially different. Smith (2002) 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 implications. 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. This is consistent with the approach of Woodward et al (2007) in assessing the linkage of ethical decision making and reasoning. Variations on this latter would distinguish expected consequences from those that are actualized. Clearly information about actualized results are not available when decisions are made and actions taken.

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. 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.

Our approach to the analysis, decision making, and taking action follows the outline presented by Mason (1995). In introducing a special issue of the Communications of ACM on ethics in information technology, Mason (1995)

discusses four factors that describe the "facts" of an ethics challenging situation. These are:
1. identifying the moral agent,
2. noting alternative courses of action,
3. defining expected results, and
4. identifying the stakeholders potentially affected.

Study	Primary Type	Summary
Mason (1986)	Categories	Presents four categories of IS situations that raise ethical issues: privacy, accuracy, property, and accessibility.
Conger and Loch (2001)	Categories	Presents a taxonomy of information ethics concerns: : ownership, responsibility, privacy, and access
Mingers and Walsham (2010)	Basis	Presents approaches to the consideration of ethical issues: consequentialism deontology, virtue ethics, and discourse ethics
Smith (2002)	Basis	Presents approaches to consideration of ethical issues as rule based versus consequentialist
Ellis and Griffith (2001)	Basis	Present alternative ethical approaches, equity, relativism, and contractualism and show that these may operate independently in particular scenarios
Goles et al. (2006)	Basis	Present alternative ethical dimensions, consequences, probability of effect, temporal immediacy, concentration of effect, proximity, and social consensus and show these may operate independently in particular scenarios
Mason (1995)	Method	Presents a sequence of steps for addressing IS issues which are: identifying the moral agent, noting alternative courses of action, defining expected results, and identifying the stakeholders potentially affected.

Table 1. Summary of IS Ethics Literature used in formulating this study

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 or they may be at a loss at how to even begin their analysis of the situation. 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 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.

3. OUTLINE OF CLASSROOM EXERCISE

This study reports on experiences with this teaching procedure drawn from its use in 10 classes over the past 3 years. These settings have included teaching 7 class sections by 4 instructors in two courses. These courses were introduction to MIS and business for freshmen conducted at a private Catholic Midwestern university in the US. Two additional sections were conducted by one instructor at a public school in the Southeast US and the final section was taught in a first year undergraduate introductory IS course in a business school in Australia. These settings were not chosen randomly, but rather were available. However, the results should represent a diverse range of students. Described below is the central tendency of procedures used across several offerings, with significant variations. If we were conducting an experimental or quasi-experimental hypothesis testing study such variation in procedure might introduce anomalies in attributing effects to specific causes, however, in the context of a learning exercise we view the variations as demonstrating a degree of robustness of the exercise to adaptation for varied purposes and locations.

The process of the exercise is shown in Figure 1. The first three steps could be replaced with a student take home option which may be useful for classes having some constraints (e.g. shorter classes, or where the classes run in an online mode).
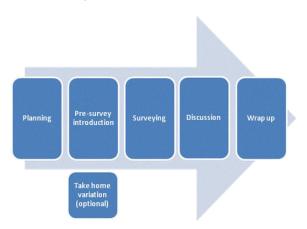

Figure 1. Classroom exercise process

3.1 Planning
At a minimum the instructor should become familiar with the scenarios (Appendix 1 shows the unformatted content of scenarios and questions) and prioritize 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. Online surveys however may limit the ability to return to questions or sections once they have been completed. This could be problematic in later discussion phases if students do not have access to their judgments and comments.

3.2 Pre-Survey Introduction
In some of the sections where this exercise was undertaken, instructors presented first an article with an ethics theme, led a discussion of that article, then presented a short lecture pertaining to IS ethics and general ethical principles. Each instructor may judge the utility of this approach. On the positive side it highlights themes and understandings that can be extended following the survey and discussion. On the negative side it could introduce a tendency for students to state what they think may be expected of them as "ethical people" rather than reflecting their initial reactions including the good, the bad, and the ugly. With the goal of maximizing the students' long term learning, we would see either approach having utility and the choice of which to use being determined by the instructors' preferences.

3.3 Surveying
The instructor should distribute the printed surveys one to each student. The instructor asks the students individually 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. We believe this is an important part of the entire exercise as it challenges each student to consider the ethical implications of a variety of situations that are not far from ones they might encounter.

Note that when presented in the Australian classroom, many of the students were non-native English speakers and took much longer and had a higher number of blank answers for some of the scenarios. Further, in debriefing, some students felt that some of the scenarios were difficult to understand. It is not certain if this observation relates to simple language difficulties or if there may be some experiential or cultural elements that make some of these scenarios less familiar to students outside the US, or all of the above. In spite of this observation, the survey led to stimulating discussion and has the potential for effective use outside the US. Instructors, however, may want to substitute scenarios more aligned with local issues or be prepared to add explanation for the situations described in the existing scenarios.

3.4 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 to generating discussion begins by asking 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 short rationale for their positions. 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, although cultural differences may also inhibit extensive discussions as was experienced in the Australian case.

Many students will be surprised by how diverse are the answers among their colleagues. This is an important point – people sometimes are aware in theory but not in practice 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. In many cases, this step will encourage an open sharing of individual opinions. It can be instructive to check on how many questions each group agreed Ask each group to count those with agreement, then count off how many with one, two, three, and on up, perhaps marking on the board the count for each total. The instructor can follow up by asking simply what accounts for so much variance.

Following the paired discussions, 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 each of the questions. This presents 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.

3.5 Wrap up
Without some kind of summary or wrap up at the end, this exercise can seem open ended and even pointless to students.

One preferred approach is to reference Mason's framework for analyzing IT ethical decision making and illustrate how it might apply to a particular scenario. Creative instructors can substitute frameworks based on Mingers and Walsham (2010), Smith (2002), Conger and Loch (2001) or Goles et al. (2006), as they prefer.

3.6 Take home variation
For one section undertaking this activity, the instructor asked students to complete the survey at home and bring it to class for discussion. This approach was intended to free up more time for discussion. Students in this approach were observed to provide much more detailed written commentary as part of the survey process, but actually were engaged in much less spirited oral discussion. Perhaps something about evaluating the scenarios and discussing them immediately rendered the discussion more salient. On the other hand, given the single example there may be additional intervention that could capitalize on the expanded written description and stimulated additional discussion.

4. OBSERVATIONS

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 recurred 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 involving information in general.

Themes were developed through a loosely applied grounded theory approach. One author examined each of the comments and sorted them by thematic topic. These comments and themes were examined and discussed between this and another of the authors. The purpose of the comments is not to prove that these are the only or even necessarily best extraction of comments from the study, but rather that these are helpful in preparing instructors to consider a wide range of themes that they can present and discuss in the classroom.

4.1 Themes observed in student comments
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 using software belonging to someone else in order not to pay for it. Following 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 (e.g.Tversky and Kahneman,1991; and Kahneman and Tversky, 1979).

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. The degree to which behavior is guided by ethical consideration may vary greatly, perhaps be overwhelmed, by considerations of perceived level of personal 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 logical actions that I might take in support of someone else's decision that I might not take if the decision were 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 following along. This also raises questions about how strictly one judges his/her own behavior versus that of 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 have been made and what expectations have been added to a generic situation. Perhaps, some of the scenarios are ambiguous or 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 still considered kept and fulfilled? There could be cultural implications in such behaviors as well.

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. However, the definition of "harm" may be difficult to pin down and may also be interpreted differently by different individuals. 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 (e.g. Chapman 2006), 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, we are 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 without dire legal consequences, although another question is how much the ordinary citizen is fully aware of the law. 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 or purposeful? While perhaps not the dominant approach to society and conflict, there is a strong tradition of civil disobedience moving from Leo Tolstoy through Mohandas Gandhi, Martin Luther King, and Nelson Mandela. Where laws are viewed as unjust, there is a responsibility to oppose them and, if necessary, disobey them. Of course, the consequences of disobeying such laws must be accepted with non-violence, according to this creed. As might be expected, this line of argument did not arise fully among our students. However on a narrower focus, students indicated an evaluation of the quality of the laws or rules as important in their ethical evaluations. For example, it might be less ethical to cheat or plagiarize on an "intelligent" assignment than on a "stupid" one. Many students, in considering corporate ban on lunch time use of the corporate computer for game playing considered this to be an "unfair" or inappropriate rule, though most did not challenge the organization's right to set such standards even if arbitrary.

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.

4.2 Observations regarding particular questions and implications for current values

Parker (1968) in studying the rankings of behaviors under

various ethical scenarios emphasized the responses to particular questions in sorting out in ranking how subjects viewed various behaviors on a scale from less to more appropriate. He found differences between students, faculty, and practitioners, but the causes of these differences remain an area of speculation and alternative explanations. His list of questions while appropriate in a research setting would be far too lengthy to use in the classroom situation.

Although our goal in this study was to use the essential scenario technique as a classroom exercise, we can use our findings to note several observations regarding the content of student rankings and comments about the various scenarios (see Table 2). In the sections that follow, we present some additional details about particular scenarios and the comments made by students in their regard. We tentatively group the cases in high medium and low acceptability as there seem to be some natural gaps and varied characteristics of each. However, the specific ordering of scenarios on a scale of acceptability for individuals in various course sections tends to vary.

4.2.1 Least appropriate situations/behaviors: The common denominator for all four of the behaviors viewed by students as least appropriate seems to be that the activity is between companies and the external world. Each of the scenarios also has the potential for widespread or significant harm, in the worst case. These scenarios involved possible leaking of viruses, using proprietary designs, fudging on use of medical prescriptions, and using corporate databases to investigate who might be laid off in upcoming layoffs. Each of these scenarios involved effects on the public or interactions with corporate resources.

To illustrate these issues, we wish to discuss two scenarios representative of those viewed as least favorable in more detail. Scenario 4 pertains to a roommate experimenting with computer viruses without an intention to harm. Key student comments pointed to such behavior being unacceptable regardless of the roommate's intention, always being unacceptable to put property of others at risk, and depending on whether or not there is permission or supervision involved in the situation that isn't mentioned. None of the comments pertained to the level of training or skill of the roommate to take effective precautions. Oddly, none of the students asked whether the computers in the lab where the experiments were conducted were connected to Internet or any other network. Both of these omitted considerations could prompt further discussion and insight into the value of technical considerations in discussion of ethical issues.

Scenario 5 pertains to an employee creating innovations at one firm then, following being laid off, using the designs and ideas on behalf of the next employer. Key comments involve details of the nature of the agreement between the first employer and employee, whether the usage will be discovered, and what the reasons are for his/her being laid off. It is interesting to note that none of the comments pertained to the amount of value that such innovations could be expected to generate, whether they pertained to products or methods, for example to medical devices or ways to produce them, or to whether the first employer intended to develop them for profit, public good or some combination. From an MIS perspective, one student raised the question of

whether the judgment should be different if he memorized the innovation characteristics or used electronic media to store and convey them.

Category / Description	Rank	N	Mean	STD	Q
Least Appropriate					
Forwarding List of Layoffs to Colleagues	1	465	1.35	.78	11b
Experimentation with Viruses	2	477	1.84	1.06	4a
Releasing Employment Data	3	474	1.97	1.10	5a
Sharing Prescription drugs with an Ill Friend	4	462	1.97	1.16	12
Mid-Level					
Unauthorized corporate SW use	5	477	2.23	1.11	1b
Checking External Data on a Co-worker	6	470	2.44	1.31	10a
Checking on Layoffs before they are announced	7	475	2.44	1.25	11a
Business Use of Incorrect Data	8	476	2.55	1.25	3a
Covering a Bad Check	9	473	2.57	1.37	9a
Inferences About a Co-Worker	10	467	2.62	1.26	8a
Check Firm's Hiring Practices	11	475	2.63	1.26	7a
Social Use of Firm Data	12	476	2.66	1.44	2a
Games on Firm Computers	13	477	2.72	1.22	6a
Most Appropriate					
Roommate SW for Homework	14	476	3.12	1.22	1a
Homework on Firm Computers	15	475	3.24	1.27	6b
Firm computers to monitor kids	16	475	3.40	1.36	6c
Checking External Data on a Co-worker' postings	17	467	3.74	1.19	10b

Table 2. Responses by students ranked by judgment of least to most appropriate

4.2.2 Mid-Level inappropriate situations/behaviors: As might be expected, these scenarios largely were of moderate personal interest to the student respondents and moderate levels of potential harm. Examples pertain to the judgments

of a landlord, human resource department, and aiding a mother in law with dementia. In each case, it is likely that the average student respondents saw the actions as going beyond proper behavior but with some justification

In scenario 3 a landlord declines to rent an apartment based on demonstrably false information. The issue reflects the larger questions of: who is responsible for the accuracy of the information and for harm that may be done from actions when it is false? Comments ranged widely from students viewing the apartment owner having the right to rent or not rent the apartment for any reason to others expressing the view that the potential tenant not have the right to prove themselves "innocent" is unacceptable. This type of questions leads to particularly interesting discussion as a result of both the landlord and tenant having legitimate claims. The landlord has a right to know about the creditworthiness of a tenant while the tenant has a right to be evaluated based on correct information.

In scenario 9 an elderly woman suffering dimension accidentally submits a bad check, so her bank employee relative "borrows" money temporarily until her check can clear. Student comments ranged from "family always comes first" and "no harm was done if the bank isn't shorted,: to the contrary view that such behavior is never acceptable. This discussion presents an excellent opportunity to contrast the "rule-based" and consequentialist views. It can also lead to discussion of the differences between personal integrity and an individual's loyalty to the group. Variations can also explore the difficulties one might have if something interferes with repaying and the "cover-up" begins to overshadow the original misdeed.

4.2.3 Most appropriate situations/behaviors: In contrast to the scenarios viewed as most inappropriate by student respondents, these questions generally pertained to using corporate or other resources for purposes perceived to create little or no immediate harm. These situations include using unlicensed software, playing games or doing homework during downtime at an employer's location whether or not this was consistent with corporate policies, and monitoring children using corporate resources.

Scenario 1a pertains to installing unlicensed software on one's computer to complete a homework assignment. Student responses included a focus on whether anyone would find out, whether the software had viruses, if the software is for personal versus commercial use, and whether one might use it for the homework then delete it. A bold teacher might ask the students in the class if they've ever personally encountered this situation. It is interesting to ask whether assuming that the software is virus free and that it is essentially certain that no punishment is likely to occur, is this actually wrong behavior? This question also leads to the larger discussion about intellectual property and what it means to own intangible goods. Whether students end up working for companies developing new technologies or those who license their use, such issues are not unlikely to arise at some point in their careers.

Scenario 6b pertains to using corporate computer facilities between work assignments during an internship to complete homework assignments. This is a situation which may confront many undergraduate students during their tenure as students. Comments indicated a view that

companies shouldn't have a rule against this behavior and that it matters if the internship is paid or volunteer. This raises issues pertaining to legitimacy of rules that seem arbitrary or illogical, but set down by those in authority. It also raises issues of varied responsibilities depending on compensation. This scenario raises the topic of security and the need for discipline among employees in enacting security policy. It is also interesting to turn the scenario around and discover what sort of security policies the students would feel are legitimate, particularly in situations where the information holdings and activities of the firm are valuable or critical to society.

4.2.4 Variance among students and scenarios: In addition to considering the content messages of students and their rating of scenarios, we examined two additional aspects of their experience. First, we calculated an average response across questions for each student. It was our assumption that such an average would show a general tendency toward stricter or less strict reactions across the set of scenarios. We observed a very large variance in such averages from students above 3.5 on the scale toward the less strict to others below 2 on the same scale. We suspect that these variations represent basic attitudinal approaches toward ethics, but would need further investigation to support that assertion. We also calculated average responses by class through the process of "averaging the averages". We also found substantial variation by class. Interestingly neither the southeastern university courses nor the Australian course proved to show the highest or lowest average tendency to "strict" or "less strict" evaluations. However, the amount of variation in views between classes of what should show relatively homogenous demographics among students was striking and perhaps shows the effectiveness of this method at eliciting a wide variety of attitudes.

Second, we examined the range of average by class responses to each scenario. Surprisingly several questions showed statistically significant differences across various sections in responses to the same questions. Most notably questions 6b and 6c showed an extremely broad range of average responses. In general, scenarios showing less strict overall ratings showed greater variance between classes. We would speculate that a segment of students view all scenarios with a strict interpretation whereas another segment views a portion with strict interpretation but interprets another portion with less strictness, but this observation also will require further testing.

Third, we expected to see the highest standard deviation and more variance in comments with mid-level questions and lower variance for both most and least appropriate behaviors. However, in fact, the least appropriate behaviors showed the lowest range of standard deviations 1.11 to 1.28 for the least appropriate group of scenarios; 1.21 to 1.54 for the mid-level; and 1.21-1.54 for the most acceptable. Perhaps there is greater consensus on what is most objectionable and greater diversity of opinion when the situation is closer to common norms.

5. CONCLUSION

5.1 Contributions
We believe that our work contributes to the literature in several ways. From a student perspective, we found

ourselves introducing ideas of business ethics to individuals with little appreciation for the decisions they will inevitably confront in the course of their careers as well as personal lives. We did this in particular by mixing questions comparing personal decisions to which they relate very well with business decisions that they are likely to encounter in the future, such as installing software on a student p.c. versus copies in the workplace. In addition to introducing ideas to individual students, the discussion of reactions to these scenarios demonstrated graphically how diverse the initial reactions to these situations were. In part this was likely due to variations in their values and their weighting of interests, for example individual versus society in general, profit versus altruism. But it was also in part due to their different past experiences and elaboration of the cases in terms of their own interpretation. This reinforced that while they may be confident in their own perceptions, they must recognize that their views are not necessarily shared by any particular other individual. As part of this same process, students see that there are many other factors that influence the "rightness" of particular decisions and many arguments that can be raised regarding both the decision and how it is implemented. Although not explored in this particular study, we can easily conceive of value for students in encountering a more general set of scenarios in early classes, such as introduction to business information systems generally followed in sophomore year in the US, followed by scenarios more targeted to corporate ethical decision making in later IS courses. Many faculty members are charged with presenting not only a one time introduction to ethical issues, but a continued demonstration of the role and importance of ethics both within and beyond the business context.

We believe that the approach presented here has a number of positive features that make it worthy of consideration for providing a positive student experience. In particular we point to the blend of individual consideration of values with the feedback from peers. We appreciate the feedback from students to instructors that are received in examination of the anonymous surveys. The quantitative data allow for some appreciation of any views of the particular class relative to the norms established by other groups over time. We are particularly appreciative of the open ended questions as a valuable component in creating a feedback loop for educational purposes. As an educational technique, the open ended question provides an opportunity for students to envision variations on the specifications of the scenario and consider influential contingencies. For example, students may note the details of the technology, of authorization, and of consequences that help illuminate the nature of how they think about IT ethical issues. Faculty reviewing their comments may also note missing concerns and use these to additionally prompt new ideas and considerations among their students both in follow up discussion with the same students and for use in future classroom activities.

From the instructor perspective, in this study we demonstrate the viability of applying this research technique to delivery of pedagogical material. It is our experience that this approach, with some experimentation, can be shaped for shorter or longer time periods (e.g. using more or fewer scenarios) and various approaches to discussion (e.g. more time in dyads with larger class groups versus more time in whole class discussion with smaller groups). It would be our view that both of these discussion modes make somewhat different contributions (e.g. generally more in depth examination of issues in dyads and more observation of the variance of perspectives in the full class discussions) and ideally even in shifting the emphasis between them, both are used for a fuller educational experience. Future testing might show some ideal proportion of each, but we expect that this will always vary with individual classroom factors such as size and instructor preferences.

Additionally, we present a practical and deliverable method for adding consideration of and exposure to ethical decision making in the larger curriculum. In our experience, faculty sometimes are asked to add components such as ethics or international business to other topics be they database management systems or financial reporting without necessarily being provided a mechanism to achieve this. We believe that the program presented here, while subject to improvement and customization, provides such a tool for faculty specializing in other matters to relatively easily add this topic to their syllabus.

5.2 Limitations of the Study

As with all research, this study is marked by limitations that readers should consider in interpreting the results. The sample was taken from three particular universities, however, the majority of data came from a single university in the Midwestern USA and may reflect peculiarities of this student population. This study is conducted with undergraduate students, whose profiles (in terms of both reasoning experience and values/incentives) are likely to differ in content from graduate students, early entry workers, experienced workers, and retired people. Our major goal was to use a research technique for pedagogical purposes. We used a particular approach that effectively stimulated discussion and thought among students, however, it is not clear how sensitive these methods are to variation in approach such that we cannot state unequivocally which elements are essential, helpful, or unnecessary within the "bundle" for effective classroom utilization.

5.3 Future Research

Naturally, we would want to see this research replicated in varied types of classrooms with MIS majors and non-business majors. We would like to see more data gathered from other locations, notably outside the US, and, for research purposes, add demographic questions for examining differences in reaction based on characteristics such as gender, age, religion, and nationality. Two additional areas we would suggest would focus on first methods for extending and updating scenarios. Our bases for scenario construction were articles from 1986 and 2001. In the meantime we believe at least two additional areas need consideration: societal effects of IT, such as cyber-bullying (particularly with the widespread use of social media such as Facebook and Twitter); and issues of societal change and justice, such as use of IT for regime change in Tunisia but also the potential for cyber-warfare. We also note that Woodward et al. (2007) present an array of scenarios highlighting differences between legal and illegal behaviors relative to computing. We would also like to see scenarios that highlight the difference between computing consumers

and producers. Meaning, for example, the same issue of intangible property theft from say a consumer of music or software and from a small company struggling to exist that cannot collect on debts owed. Further, following Woodward et al. (2007) there is much room for design of procedures to quantify the effects of this educational exercise. We observed significant and spirited discussion of ethical reasoning used by students in evaluating the scenarios. However, more formal procedures such as before and after testing using the ethical reasoning instruments of Woodward et al. (2007) could provide stronger evidence of change in reasoning capabilities resulting from such discussion. Using such procedures, variation in teaching technique, discussion procedures, scenarios, and other design features could be tested for their contribution to change in ethical reasoning levels.

6. ACKNOWLEDGEMENTS

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APPENDIX 1. Student Information Ethics Questionnaire

All questions are on a five point Likert scale anchored by completely appropriate and totally inappropriate. Each question is followed by the open ended question: On what additional circumstances might it depend?

1a. 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

1b. 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

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

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

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

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

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

    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

    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

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 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

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

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

10a. 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

10b. 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

11a. 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

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

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

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