Technology: Illegal, Immoral, or Fattening?

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ABSTRACT
We are all aware that advancements in new technologies are reshaping the world we live in. The rate at which science and technology are beginning to restructure our society is fast out pacing our ability to assess their impact on our culture, environment, and everyday lives. There are many different sides to the discussion on legal and moral (ethical) uses of computers. In some interpretations, the morality of a particular use of a computer is up to the individual to decide. Thus, absolute laws (legal) about ethical (moral) computer usage are almost, but not entirely, impossible to define. The central aim of computer ethics – and this paper – is to help formulate guidelines to direct individual and collective action in the development, management, and use of information technology. It is part of the task of computer ethics to define, develop, and modify existing moral theory when existing theory is insufficient or inadequate in light of new demands generated by new practices involving technology. What are we to do? Or is this whole concept just plain fattening? In this paper, find out what one Midwestern university's approach is to teaching this concept to technical support staff.

Categories and Subject Descriptors
K.3.2 [**Computers and Education**]: Computer and Information Science Education – *accreditation, computer science education, curriculum, information systems education, literacy, self-assessment*
K.4.1 [**Computers and Society**]: Public Policy Issues – a*buse and crime involving computers, ethics, intellectual property rights*
K.7.4 [**The Computing Profession**]: Professional Ethics – *codes of ethics, codes of good practice, ethical dilemmas*

General Terms
Management, Security, Human Factors, Theory, Legal Aspects

Keywords
Computer crime, copyright, ethics, faculty development, fair use, plagiarism, student management, teaching, technology, training

SIGUCCS'04, October 10-13, 2004, Baltimore, Maryland, USA.

1. INTRODUCTION
American author and critic, Alexander Woollcott (b.1887 – d.1943), coined the phrase "Everything I like is either illegal, immoral or fattening." This concept seems to fit well with technology issues we face today. Security concerns, privacy questions, and administrative roles in technology governance have given rise to questions of propriety and legality that have not been considered until now. For some of us in this technology profession that kind of stress leads to indiscriminate grazing on junk food, participating in new bad habits, and specifically emphasizing the popular concept that all "techies" eat pizza, drink highly caffeinated beverages, and live to surreptitiously delve into other people's lives. Are these perceptions myth or fact?

The Internet has opened the door of the world to all of us. Almost anything one would care to know about any subject you could possibly think of, is now just a mouse click away, as are millions of people world wide who are surfing the Net the same time you are. Unfortunately along with all the benefits one finds on the net, there are also the detriments.

The introduction of computers into the workplace has introduced many questions as well: Should employers make sure the workplace is designed to minimize health risks such as back strain and carpal tunnel syndrome for people who work with computers? Can employers prohibit employees from sending personal memos by electronic mail to a friend at the other side of the office? Should employers monitor employees' work on computers? If so, should employees be warned beforehand? If warned, does that make the practice okay? There is hardly a discipline or business that does not use computers today. This makes these questions and others like them all the more important for today's society to answer.

2. DEFINING THE CHALLENGES
There are many different types of computer crime. For the purposes of this paper, the primary focus will be on the abuses of intellectual property which includes copyright violations, plagiarism, illegal downloading of files, and similar technical crimes. These crimes are not associated only with computers, but technology has made them more prevalent and apparent. To over-simplify, this group of similar technical abuses can be encompassed with the label of "ethics in technology."

Many problems also occur when computers are used in education. Should computers replace actual teachers in the classroom? In some schools, computers and computer manuals have already started to replace teachers. This would seem to beg the question of considering this an unethical use of computers

because computers do not have the ability to think and interact on an interpersonal basis. But that would be the subject of another paper.

Complete privacy is almost impossible in this computer age. By using a credit card or check cashing card, entering a raffle, or subscribing to a magazine, people provide information about themselves that can be sold to marketers and distributed to data bases throughout the world. When people use the world-wide web, the sites they visit and download things from, make a record that can be traced back to the person.

More and more data base companies are monitoring individuals with little regulation. Other forms of monitoring could eventually be used to discriminate against individuals – not because of their past but because of statistical expectations about their future. For instance, who knows if the harvesting of medical information could lead employers to make decisions of employment based on possible future illnesses rather than on job qualifications? Is this an ethical use of computers?

Trying to come to grips with all of this may lead to the over-consumption of chocolate or other mind numbing junk food that is definitely not part of the current diet fads. (Does this make technology fattening?) We need to get a better perspective on this issue and attempt to relate it to the academic world. To this end, South Dakota State University decided to enlist the Student Technology Fellows in assisting faculty with wrestling with some of the more weighty technology related issues.

As a quick review, the Student Technology Fellows (STF) program is designed to help faculty and students learn new technology developments to assist with the education process. With this student-assisted support in the use of technology for instruction, faculty members will be able to integrate more technology into their classroom teaching experiences. As we have already learned, there is an intergenerational gap between the student teacher and the teacher student. This has been bridged by having the STF learn about adult education and the differences in learning styles and techniques between the adult and traditional student. In researching the legal and ethical issues surrounding education in general, it became readily apparent that both students and faculty once again have very different outlooks and definitions regarding morality and the interpretation of the law. Thus another "teaching moment" was created to address this significant issue of ethics in technology.

3. PRACTICAL APPLICATION OF LEARNING

The idea of integrating technology into the curriculum is not new. The pedagogical benefits of improved student learning through technology are backed by research and are considered major motivating influences in adding technology to the teaching process. Warren Wilson in his research on faculty perceptions and uses of instructional technology found that "exemplary teaching combines skillful use of pedagogy with content expertise and innovative uses of technology."[4] In order for this to become reality, universities must address the technical training issues for faculty to learn how to incorporate technology into the pedagogy, curriculum, and learning process – whatever it may be.

The Student Technology Fellow concept seems to be one answer to the faculty technical training dilemma. It appears to be all well and good – at least in theory and on paper. The practical application of the program has turned into a different matter altogether. The perception of the faculty to the students providing technical assistance was clearly different than from the student's viewpoint of teaching teachers technology. The learning style gap is even more pronounced when it comes time for the "reverse teaching" that is part and parcel of this venture. Add to that the social and moral differences of the generations, and now there exists the potential for gross misunderstanding and direct conflict of interpretation. Witness the differing viewpoints concerning peer-to-peer file sharing with music and video.

4. BRIDGING THE ETHICAL INTERGENERATIONAL GAP

The first order of business was to provide a forum for the Student Technology Fellows so that they could become educated with a few of the more common ethical and legal issues facing academia toady. As an example, copyright laws, fair use, the Teach Act[2], and Digital Millennium Copyright Act (DMCA)[3] all have significant influences in how teaching and learning take place. Plagiarism is another major problem facing student and teacher alike. Student and teacher interaction over the interpretation of these intellectual property rights is yet another subject for attention.

To take a first step in bridging the gap between generations in addressing these issues, a decision was made to offer a non-credit class on "Ethics in Technology" for a volunteer group of STF. Twenty-seven students signed up for the class which was designated to be held on-line with the first and last class in a face-to-face setting. Other ethics classes had been tried in the past, but were somewhat unsuccessful due to the broad content of the subject. The single one-hour class session dealing with copyright laws had held the most attention, but was not nearly long enough to cover the subject in any detail. However, it made enough of an impression on the STF that they have all become more sensitive to the copyright and fair use activities of the faculty. This has resulted in an increased awareness on the part of the faculty concerning this important subject. We wanted to expand upon this idea.

All too often discussion surrounding ethical issues waxes philosophical with no real meaning or objective conclusions reached. Freud, Kant, and modern ethicists are all studied and quoted with little or no actual current practical application made of the theories. (That is an over-statement, but it will do to promote critical thinking on this particular topic.) It takes a considerable amount of time to teach and learn the nuances of some of these theories before one can apply them to daily living. We did not have the luxury of the common three- to five-credit hour class that is usually associated with the deep discourse required of this type of study. We were limited to one hour per week for one semester to introduce the subject and develop some practical results of the learning. Theory, therefore, was relegated to the back burner.

The syllabus (as created by the author) for this class defined it as follows:

> This class is a basic course designed to acquaint the student with beginning ethics as applied to technology. The course concentrates on the theory and practice of computer ethics. The aim of the course is to study the

> basis for ethical decision-making and the methodology for reaching ethical decisions concerning computing matters. Hands-on experience and practical exercise will dominate the instructional format. As such, there will be no formal text. Most of the classes will be conducted on-line in order to facilitate as much critical thinking and insightful participation as possible. Suggested books and articles for study will be referenced during appropriate classes.

The course objectives were simple.

- Identify current methods and procedures in ethics and technology.
- Analyze case studies of real and potential ethical situations and problem solving scenarios.
- Demonstrate proficiencies in synthesizing concepts.

Assessments of the class at the end of the semester were important to determine the level of learning that took place. This was done by having each student search for and document either an ethical dilemma pertaining to their discipline, or, a personal ethical issue involving others. In either case, the paper was to describe the dilemma, ramifications, and a proposal on how the situation should be resolved. A reflective evaluation of the issue was an important part of the paper. In a random drawing, six students were selected to present their paper in front of the class for critique. Reviewing the papers revealed that much of the left out theory was actually incorporated into practical application as experienced by the students.

5. DELIVERING THE CONCEPT

As stated before, 27 students volunteered for this course. An arbitrary decision was made to hold the class on-line in order to meet the many time constraints that are part of every student's life. There were two face-to-face meetings, once at the beginning of the semester and once at the end. These meetings were used to introduce ethics in technology as the subject focus at the beginning and to provide a summary forum (assessment) at the conclusion of the course. A locally produced course management program called "Maverick" was used as the communication media. Within this program course participants used a discussion board, file exchange, and drop box. The class was too large for the instructor to effectively monitor chat room exercises. Since there seemed to be a large number of technically oriented case studies on ethics to choose from, that venue was designated the primary delivery forum. Microsoft PowerPoint© was also employed as a supplemental instructional method.

Part of the expectations of this extremely abbreviated course is that the STF would read about ethics, morals, virtues, and similar societal obligations as it pertains to technology. That reading might happen on purpose or accidentally. The philosophies of Socrates, Plato, Kant, Freud, and other notables in the field really should have been studied thoroughly before we embarked upon present day scenarios. Since we did not have time to do that, there was an explicit charge to the students that they base any responses to case studies on more than just gut feelings. While those feelings are valid, there needed to be a more substantial reasoning behind each individual's philosophy of ethics, morals, virtues, and legal obligations. Parental and societal upbringing plays an important part of this background as does grade school, high school, and current university experiences. Students were cautioned to be wary, however, of the Dorm Room Dominator who has all the answers to everything under the sun. One of the very important reasons you are in college, students were reminded, is to question, explore, research, learn, and adopt new ways of thinking. Students were told that, in this class, there may not necessarily be a "right" answer to some of the studies and discussions. They were required to draw their own conclusions based upon personal experience.

Side discussions were encouraged. This is a little more difficult to do on-line, but can be quite exciting because there is sufficient time for everyone to formulate a studied opinion and express it in a safe environment. Students forwarded these topics to the instructor for publishing in the proper format. Submitters could remain anonymous if they so desired. Interestingly enough, no one exercised that option.

There was a sincere desire by the instructor to instill a sense of excitement about the topic in the students. The best way to do that was to make them think about current topics and apply the results of that study to their daily lives. Some examples of the topics covered included:

- What significance does (or should) the "Ten Commandments of Computer Ethics" have on the SDSU campus?
- Is it ethical for a cable installer hooking up a computer to a cable modem to answer software End-User License Agreements (EULA) without the home owner's permission or input?
- What are the ethics involved with promoting a city-wide venture creating a network service that would allow residents to access a wide variety of municipal and school services from their home computers?
- What do you gain by plagiarizing? (This included a discussion on "paper mills" and other similar Internet resources.)
- Does the option to cheat or illicitly acquire advantages over others justify bending and even breaking personal moral or ethical code in the name of competition?
- Should a university – specifically SDSU – teach a course on hacking? (This was followed by the question, "If a hacker breaks into a system and obtains material that is also available for free, is it theft?")

There is an attempt to keep this class current and topical. As such, there are times when the syllabus is deviated from slightly in order to present some news of the day that may affect us all. In one example, the students were instructed to read a couple of articles in the local newspaper. The assignment continued with these instructions:

> After reading the articles, please go to the "Discussion Board" and answer the questions posed there. Once you have responded to the original questions, find two other students and respond to their interpretations. One of the students you must agree with and the other you must disagree. Be sure to not pick on the same one or two students for your reply. If there are already two responses to that student, pick another one to answer. If

> all students have the necessary two responses, then you are free to randomly pick anyone else. Make sure your arguments carry enough detail to support your position. Do not be snide, rude, or use sarcastic humor. That does not come off well in the written medium. Remember, this is a real world experience and carries real consequences. It could happen to you…

Many more case studies were studied and discussed electronically. Participation in these discussions resulted in several of the students either becoming aware for the first time of the importance of personal ethics or for some, changing their opinions drastically.

Some side discussions such as "should the honor roll be eliminated from public view" were debated outside of the university classroom and expressed in K-12 teacher lounges where some of the STF were practice teaching. Other STF took discussions home to challenge their parents and siblings with these new thoughts. Others took the fledging concepts they had just learned back to the faculty they were working with to get their viewpoint. In many cases it was an eye-opening exercise for both student and teacher.

Another "hot" topic included the inevitable argument over whether or not downloading music and video files through peer-to-peer file sharing was illegal, immoral, or unethical. Many students thought that CDs were over-priced anyway, and that record producers and musicians were already too fat from the money they make, and therefore they shouldn't mind "losing" some sales for the sake of extra exposure. Then there was the other side of the intense argument pointing out how profits are split up and that the musician is actually on the "losing" end of the marketing chain, and how would you like if someone stole something from you that you had created, and the final point of the matter is that these kinds of downloads are against the law. End of argument. The beauty of it all was that the students came to the same ethical conclusion, together, after they had heard each other out.

The point of these case study lessons was learned by all, but not necessarily embraced by all. However, in spite of some differences of opinion, the basic concepts were carried back to the workplace and classroom to be shared with faculty, staff, and other students. Mission accomplished – without consuming too much chocolate, donuts, or other snack food in the process.

6. RESULTS OF THE "TECHNOLOGY: ILLEGAL, IMMORAL, OR FATTENING" LEARNING ENLIGHTENMENT

In addition to the goal of increasing awareness of ethics in technology for students and faculty, a rather interesting sidebar was developed from this exercise. This still had to do with the Student Technology Fellows program, but in a different capacity. It also became a staple of the interview process for full-time technical staff members. That sidebar was the presentation of ethical questions as part of the application and interview process.

All STF and computer support candidates (technicians) must take a technical proficiency test. Conventionally, these tests consisted of standard questions concerning simple troubleshooting methods and demonstrating knowledge of some hard facts with technology processes. Objective scoring was the end result to determine who would get an STF award or be offered a technical support job.

To enhance our evaluation procedure, we added two essay questions to this testing process. These essay questions were designed to elicit personal ethical and moral responses. The answers to these essay questions told us a lot about the character of the candidate. Specifically, the essay questions are:

1. You are asked to create a web page using multi-media enhancements such as video clips, sound bites, cartoon images, and other enrichments from various sources. Describe the ethical or legal issues surrounding the use of borrowed works by others in the creation of a web site. Explain why you would, or would not, complete this assignment.
2. Describe the legal, moral, and ethical issues surrounding the use of peer-to-peer file sharing as exemplified by Mozilla, Napster, Gnutella, KaZaA, and other similar products. Expound upon the pros and cons of using any of these services that provides free downloads of copyrighted audio and/or video materials.

The answers we are looking for should include something along the following lines.

1. Enrichments can only be used if permission is given or they are located on a legitimate free site. The exception would be if the use of the web site is in a secured academic classroom setting for teaching purposes and the rules of Fair Use are met.
2. The RIAA and Motion Picture Academy are currently prosecuting individuals and institutions for the unlawful downloading of music and video files. This activity is patently illegal in spite of popular belief. However, the use of peer-to-peer file sharing outside of this realm does have a legitimate place in academe. Its use must be monitored for prohibited activity and sanctions given to those that violate that trust.

Essay answers should show evidence of understanding the normative suggested responses no matter how obtuse the replies may be. These questions are scored on a Likert Scale[1] from 1 to 5 with 1 being a "no" (or totally wrong) answer to 5 indicating the topic was "covered well." This part of the process allows for a subjective evaluation to take on a more objective tone. Committee member responses are then averaged to determine a ranking of the candidates. The intention is to make the selection process a little easier and more defendable.

This style and type of questioning has changed the selection criteria significantly. Less time is now taken to teach students and employees the expected ethical behavior when it comes to technology. Further, it is easier for them to understand that these concepts must be taught at all levels of learning. Sometimes this is especially true of some faculty who have a total disregard for copyright, fair use, and other ethical (and legal) abuses of intellectual property.

The bottom line to all of this is that there is now a growing number of students (and staff and faculty) who are becoming more cognizant of the effects technology has in their lives. As more and more people use technology to enhance their jobs and lives, there is much more of a societal need and responsibility to

remain ethical and moral in purpose. More ethical questions are being raised in many quarters regarding the application of technology in daily living. By producing some critical ethical thinking at an early stage, some of the more profound moral issues may take care of themselves at a later time.

Our goal is to continue this line of study and enhance it with more discussion of the legal, ethical, and moral aspects in the practical application of technology to our university community. Some of the processes being considered are to hold seminars for faculty, conduct training sessions for all technicians, and expand the current class offerings to the STF. It has even been suggested that a formal course of study for credit be established as an elective for all students. We know we can fatten our collective knowledge by at least increasing the awareness of ethics, morals, and law as they relate to technology in our everyday contacts. Perhaps some day we can answer the philosophical question, "Just because we can, should we?"

7. CONCLUSION

The Internet has changed the moral landscape of academia in interesting and important ways, intensifying some traditional problems such as plagiarism and opening up some new, uncharted territory where originals and copies stand in a new relationship to one another. In the coming years, we will continue to see a tension between the values and practices inherent in the structure of web technology (especially browser technology) and externally-grounded values and practices (such as individual copyright) that are at best an uneasy fit into web structures. The ethical questions will still exist – some in new forms. How to answer them will be the challenge. New laws will guide and direct some of the moral issues we do not even know exist yet. How will we be teaching ethics in technology in the future? What will be the content? The answer for now is – please pass the chocolate covered donuts.

8. REFERENCES

[1] R. Likert. Likert Scale. http://www.nwlink.com/~donclark/hrd/history/likert.html

[2] Technology, Education, and Copyright Harmonization (TEACH) Act. http://www.arl.org/info/frn/copy/TEACH.html

[3] The Digital Milleneum Copyright Act of 1998. http://www.copyright.gov/legislation/dmca.pdf

[4] W. Wilson. Faculty perceptions and uses of Instructional Technology. *EDUCAUSE Quarterly*, pages 60-62, Number 2 2003.