

## **Ethics!**

### **A difficult course to deliver**

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#### Introduction:

When I joined Moorhead State University in 1989, ethics was a well-established required course for all computer science majors. According to the records the course was offered as far back as 1986. The catalog description of the course was "Ethical and Societal concerns related to the widespread use of computers and the resulting responsibilities of computer scientists". To register for the class the student had to have junior standing in computer science. Looking at the syllabi of the course, it is evident that it involved a great deal of both writing and the reading and presentation of selected papers.

Though I did not teach this course at Moorhead State University, it was clear that the students perceived it as a "useless waste of time" which was required to graduate. Most students who took the class were seniors and it was usually taken just prior to graduation. My advisees refused to accept it as a useful course, felt that it added nothing to their ethical values or awareness, and claimed that the papers they read, wrote and presented were wasted efforts.

In 1993 the university decided to convert from the quarter system to the semester system. This gave us a great opportunity to overhaul our curricula in terms of offerings and content. The negative feedback we had been receiving on the ethics course made us skeptical of its usefulness and hence, over the strong objection of some faculty, the course was changed from a requirement to an elective for both majors. However, in order to insure that the ethical and social issues of computers were covered somewhere in the curriculum, we decided to include some of these issues in several of the core courses, especially the introductory ones.

As was expected, the elective course in ethics has never been offered, and faculty strongly believe that if it were offered the enrollment would be near zero. Also, the degree of inclusion of ethical issues in other courses is dependent on each faculty member's perception of its importance and, unfortunately, many completely ignore it. As a result, the concepts of computer ethics or ethical issues for a computer scientist, are foreign to most students.

#### A model that works:

In 1996 I joined the faculty at St. Cloud State University. At that time ethics was a senior level required course that students actually took by arrangement. Professor Fisher was the only faculty willing to teach the course and, since she was on sabbatical during 1997-98 academic year, I was scheduled to teach it during her leave.

At the first class meeting a survey that addressed several ethical issues in computer science and the responsibility of a computer scientist regarding these issues was given to the class. The survey also addressed the students' attitudes, perceptions, and appreciation of the issues. The survey was tabulated, summarized and returned to the students as a future assignment on critical analysis. The survey results and the students comments clearly indicated that they felt the course would be a waste of time and that they would not take the course if it were not required. More importantly, it was clear that the students would never have been aware of the issues and would have responded to actual situations reactively, rather than with a reasoned ethical approach.

Since critical thinking is an essential component of a course in ethics, the first assignment involved researching and writing a paper on critical thinking. The following format was used for weekly writing assignments: After removing personal information, the papers were exchanged between the students for critical evaluation. Thus the

student was exposed to his/her own analysis, a peer's analysis, a peer's critique, and the instructor's critique. A class discussion, moderated by a student, followed.

As was the case at Moorhead State, students were assigned reading materials and an extensive number of papers to write. Other techniques used were case studies and role playing. The issues that were covered included privacy, security, gender, minority and legal issues as well as issues of safety, quality, deadlines, and personal and moral responsibility for the product and its use. Each student was also required to research, write and present a term paper to the class.

Another very important required component of the course, was the weekly journal. Each student was required to write at least three weekly entries in a journal and indicate date and time of each entry. The journal items could range from normal personal observations to issues that were raised by the news media or specialized publications. At least one weekly entry must have involved critical thinking. The journals were collected and graded weekly and students had to be prepared to read a journal entry to the class. The class was then given the opportunity to respond, comment and analyze the issues raised by that student. Initially the journal entries were superficial. However, as the students increased their awareness of the ethical issues and the real dilemmas one has to face, they became more reflective and their analysis acquired more depth of thought. Over time, the students became more critical readers and observers and acquired more appreciation of the ethical issues they must deal with as professionals.

Most of the class time is dedicated to group discussion. At each class session, a student moderator is selected and a focussed group discussion of the issue of the day follows. This is a very valuable approach to broadening the awareness of both the students and the instructor. During class discussion, the instructor's primary role is to record the contribution of each student to the discussion and to insure that the class remains focussed on the issue. Occasionally the instructor may comment or add points that the students are missing. Occasionally a private meeting with the day's moderator was necessary to help him/her get the discussion going, keep it on point and get the other students involved. For these sessions, each student is given a participation grade with feedback on his/her contributions to the discussion.

### Sample Journal Entries:

1. The sinking of the Titanic was a catastrophe that precipitated many necessary changes in the shipping industry. It can be argued that those who perished in that disaster effected the safety of untold millions of others who might still be going to sea on unsafe ships. Unlike the pre-Titanic shipping industry, the computer industry has generated relatively few casualties thus far. However, given the absence of safety standards and the toothless ACM moral code, I am afraid to think what our titanic will be.
2. If the government can classify strong encryption as munitions and prevent its export to foreign countries, why shouldn't it be able to classify software which controls x-ray machines or nuclear power plants as hazardous material which require federal inspection?
3. Is it ethical to sell a box and a 10-cent CD? That is essentially what Microsoft is doing with its Internet explorer. You can download IE for free or you can pay \$30 to have your own CD and possibly some skimpy documentation. ...
4. Spam: To most people it's nothing more than Spiced Ham. To seasoned veterans of the Internet, it is Bubonic Plague of the information age. Not only do I regularly receive unsolicited email for everything from free test products to sleazy get-rich-quick schemes, I even get offers for mass-mailing software! It isn't bad enough that junk mail has found its way into the virtual world, people are using it to further its use! If you think about who pays for the Internet, it hardly seems ethical to use it for such personal gain. How many countless universities are paying for some garage-band salesman to send 100,000copies of his ad to 100,000 angry recipients? On the other hand, if we start charging to access each site, the Internet will no longer be the open community that it is. What is the ethical measure of control we should exert over the net and its abuses?
5. The value of expertise: What is a fair price for services? Any profession can overcharge for its expertise, but the heavy dependence of our society upon computers allows professionals in this field to easily abuse the faith of consumers. Most economic textbooks define the fair market price as the highest price a producer can charge for a product and the lowest price the consumer is willing to pay. But what if a consumer is willing to pay

much more than the service is worth? Although there are fairly common rates for various computing services, the quality of the provided service varies greatly. The disparity of service gives computing a bad reputation with many companies. Should the industry be regulated to insure high quality and fair pricing?

6. 6.Y2K: So whose fault is the Y2K bug? ....

### Conclusions:

The above approach may seem to minimize the role of the instructor, but in reality it increases the burden on the instructor. The success of the class greatly depends on the instructor's ability to create an environment in which the students are at ease with each other. It requires much thought and ingenuity to develop a level of comfort in the class that gives students the courage and confidence to share their personal thoughts and beliefs without fear of being put down. It takes thought and preparation to show students how to isolate the issues from personalities.

This course involves a great deal of reading and a tremendous amount of critical grading of papers. Swapping the papers for evaluation by a peer helps, but no matter how hard one tries, some students will question one's objectivity. Perhaps the most difficult aspect of this process is the objective evaluation of a student's participation in and contribution to the discussion. The quality and writing skills of our students are disturbingly poor, and generally it is difficult to get students involved in a discussion. This course also gives one an appreciation of the work requirements of our colleagues in the liberal arts. One other suggestion that may be of value in a course like this is to collaborate with faculty from the English or Philosophy departments.

Lastly, the most fulfilling part of the above method is what you see in the exit notes and course evaluation.