

Raising the awareness of ethics in IT students: further development of the teaching model

Geoffrey Dick

School of Information Systems
University of New South Wales
Sydney 2052 AUSTRALIA
Email: G.Dick@unsw.edu.au

Abstract

The question of ethics of Information Technology professionals is one that gets considerable attention in both the popular press and some academic literature. There have been occasional calls for undergraduate courses to include the topic in the curriculum. Most schools do so. In many cases students, particularly undergraduate students, have only a vague notion of some of the business issues involved and the professional bodies' published codes of ethics make for fairly dry classroom material. In 1989, Dan Couger discussed teaching ethics in an IS environment.

This paper takes the approach outlined by Couger, essentially personalising the issues, a step further by drawing on input from leading IT practitioners. The approach in the School of IS at the University of New South Wales incorporates the suggestions contained in several recent publications, calling for management to take the lead in setting ethical standards, providing current advice to students and developing the existing ethical awareness of the students. The paper gives a review of current literature in the area and gives details of the teaching methodology adopted.

Introduction

The issues surrounding ethics in IT gains continual exposure in the press. Matters such as invasion of privacy, wider and wider access to corporate and law enforcement agencies' databases (legal or otherwise), computer stock exchange trading, computer viruses and the prophesies of doom accompanying them all feature regularly in the newspapers around the world.

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Professional associations covering the IT area continually struggle to implement an effective code of ethics and curriculum review bodies regularly call for ethics to be a part of the formal curriculum, if not as a separate subject then at least as a substantial part of one or more compulsory subjects in an IT course.

A review of the available literature indicates that there has been little research into the efficacy of including a topic dealing with ethical issues in the undergraduate curricula. Where such a topic is included, typically this will be a lecture on ethics, followed up by a short tutorial question or subject for debate where a question is posed with which the students can identify, such as the rights and wrongs of copying software.

This paper discusses a further development of the pedagogical approaches outlined by Dan Couger [Couger, 1989]. It has been developed for the students of the Business Information Technology programme at the University of New South Wales and while keeping the personalisation of the topic at the forefront, it involves leading industry professionals in the debates with the students.

Background to the BIT programme

The Business Information Technology (BIT) programme at the University of New South Wales is one of four National Pilot Co-Operative Education degrees in Information Systems (IS), introduced for the first time in Australia in 1988. The programme offers a normal undergraduate 3 year degree, integrated with three, six-month industrial training periods with sponsoring organisations, spread over 4 years. The students are awarded a scholarship, funded by the sponsors, for the duration of their degree. They are selected on the basis of academic achievement and performance at an interview conducted by academics and industry representatives which considers such things as leadership potential and

motivation. The program leads to the award of B.Sc (BIT) and has been operating now for seven years. The first cohort of graduates have been working in the IS industry for over two years.

Important drivers for the development of the BIT programme were the desire to increase the quality of students entering IS programs and the quality of IS graduates entering the workforce (UNSW [1987a], UNSW [1987b], Werskey [1989]). The crucial importance of relevant and up-to-date Information Systems (IS) curricula has also been emphasised in the literature (Hudson et al. [1992], Benbasat et al. [1980]). Another study dealing with behavioural aspects in Co-Op education was reported in Jones and Dick [1993].

The industry sponsors are actively involved in the programme and in particular, the curriculum. They conduct regular reviews as to the appropriateness of the curriculum, particularly as it relates to business needs. The last of these, conducted in 1992, reached the conclusion that although the formal academic curriculum was sound, the students would benefit from a series of extra-curricular activities which would enhance their value in the workplace. These extra activities, while not being a formal requirement of the course, would be made as attractive and topical as possible to encourage voluntary attendance. Sponsors, academic staff and students would jointly choose the topics and set the priorities. Career planning, the changing role of IS and ethics were all high on the agenda.

The need for ethics in the curriculum

There is continual pressure on employees to provide the end results which are often measured by their effect on the bottom-line [Plenert, 1989]. There is increased possibility for manipulation (to put it politely) of information resulting from access to central databases, and in particular when various databases are run against each other. The central message from Plenert's paper is that management needs to place a higher priority on honesty and integrity than on numbers, meeting quotas and sticking to work schedules, etc. It is up to the organisational leadership to provide guidance on ethics to employees -management must change the signals that are being sent to their staff.

The idea of management being responsible for modelling the kind of behaviour they expect from their employees is supported by Rice and Dreilinger [Rice and Dreilinger, 1990] who suggest that managers can legitimise the discussion of ethics and need to promote a climate of "here's how we do business around here" rather than

compile a list of "thou shalt nots". This view comes from the realisation that in many cases ethical issues, perhaps particularly in the IT area with advances in the technology, cannot be spelt out and employees would be more likely to benefit from a general feeling of the way they are expected to conduct business.

There is evidence that MIS professionals are optimistic that there is a positive relationship between success and ethical behaviour and that successful managers and organisations need to be socially responsible [Vitell and Davis, 1990 (a)]. They too point to the huge potential for the misuse of information and call for managers to set an example. Their work would indicate that in many cases a formal code of ethics is not required, ethically behaviour seemingly can be modelled on the behaviour of managers and the organisation's way of doing business. They also found that MIS managers had a strong sense of social responsibility. In a subsequent paper, [Vitell and Davis, 1990 (b)] they reported that the ethical climate may improve job satisfaction. When workers advance their careers by unethical means, this can have a devastating effect on employee moral and job satisfaction.

The problem of proper ethical conduct is compounded by there being no single code - there are four organisations in the USA alone promoting different codes. Each has its flaws and there are differences between them. To add to this problem, only a small proportion of IT professionals belong to the professional societies. Perhaps the most serious flaw in the varying codes [Oz, 1993] is the lack of priority among the subjects of moral obligations. In other words there is room for conflict within the individual codes.

There is some evidence of awareness of ethical issues in students [Paradice and Dejoie, 1991]. Their work indicated that MIS students exhibited a more socially-oriented ethical decision making process than non-MIS majors in business faculties. The study did not necessarily show that they were "more ethical" than other students, just that they were more likely to consider societal impact in the decision making process.

The idea that control and example must come from the top, is supported by Slaughter [Slaughter, 1992]. He suggests that education is the only answer. He invites us to consider the quality of education received by our young people and encourages us to develop an environment to facilitate the exchange of ideas and not just the dissemination of information.

"... we must educate people who understand the social, ethical and philosophical consequences of their work,We need individuals who are not

just "computer friendly, but also "people friendly"."

[Slaughter, 1992]

This background of the need to include ethics in the undergraduate curriculum, the role models provided by senior management, the confusion existing in the various codes of ethics and the likely receptive attitudes in the minds of the students led to development of the approach outlined below.

Approaches to teaching ethics

Three pedagogical approaches to raising the awareness of ethics in the minds of students were outlined by Dan Couger [Couger, 1989]. Briefly, they were:

1. A brief lecture, followed by a comparison of two codes of ethics.
2. Promoting a debate in class on a topical ethical violation.
3. Using scenarios to which the students could directly relate, such as copying software and considering that under the codes of ethics; then reviewing case studies considered by a panel of experts.

Most of these approaches have been tried over the years with only limited degrees of success. In the Business Information Technology programme referred to above, during introductory Computer Information Systems subjects, students are invited to consider ethical issues surrounding areas of interest, particularly those receiving current coverage in the press, however no attempt is made to specifically relate the issues to a code of ethics.

The major treatment of ethics comes through a colloquium, put into the programme at the suggestion of the sponsors' review of the curriculum outlined above. The students develop a (possibly fictitious) case study, but one which has real implications for them, and invite senior management from leading IT organisations to join them for a seminar followed by an informal gathering to discuss the issues raised. The students at the colloquium come from all four years of the undergraduate programme and most have some experience in the work place as a result of their industrial training.

One such case study, full details of which are given in the appendix, covered two recent graduates, sharing a house and working for competing organisations. One had some pressure brought to bear on her to find details of the other

organisation's system under development. After some hesitation, she did so. The seminar took the form of a board room debate where the employee's future with the firm was under serious consideration. Views were put by legal counsel from DEC and IBM and the decision was made by the Managing Director of Unisys, Australia, "acting" the part of the case study organisation's CEO.

This approach works well for many reasons -

- the issue discussed is a real issue for many students, most might expect to be in similar situations;
- it provides the students with a valuable insight into how the leading IT organisations in Australia (and the world, in this case) do business and what managerial expectations are likely to be; and
- it builds on a gradual awareness of topical ethical issues and considers these not in the light of strict code of conduct but in a sense of what is right and wrong.

As an aside, the appendix to this paper gives the case study as prepared and distributed by the students - the informal, almost flippant style seems to enhance the personalisation of the topic.

Conclusions

It is difficult to raise the students' awareness of ethics through a classroom environment. The codes of ethics are confusing, somewhat contradictory and flawed. It is difficult to personalise events that are reported from the real world as frequently they have little meaning for the student. Tomorrow's IT professionals, today's IT students, will look to management for a role model in ethical behaviour.

It seems most appropriate to integrate the management and students, in this area at least, as soon as possible. Management have shown a ready willingness to be involved with the programme and with this area in particular. Feedback from the students is that this has been a particularly effective way of discussing ethics. Of course, the ultimate test will take place over time when some measures of ethical behaviour in the workplace might be able to be developed, however for the time being, it seems a very good way to raise the awareness of ethics in the minds of students.

Further work may be able to be undertaken comparing the ethical values of students involved in this programme with those of professionals and against those who were not

party to this approach. It may also be interesting to compare students from different countries and cultures.

In his paper in 1989, Dan Couger made a barely disguised plea for greater coverage of this topic in the mainstream IS journals. Since that time, the coverage has improved only marginally, at best. Ethics as a topic is still largely ignored in the IS literature and the coverage of need for the inclusion of ethics in the IT curriculum and appropriate methodologies that might be employed is almost non-existent.

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Appendix

Colloquia Night: Ethics in IT

Subsequent to an incident a fortnight ago, I am in a spot of bother and have been forced to seek legal advice. Let me elaborate.

In the salubrious district of Coogee, I share a flat with one Mr Andrew Rose. Andrew works as a graduate level programmer/analyst for Australian Video Software Pty Ltd, who are a software development organisation. Australian Video Software is a close competitor to my own employer Software Buccaneers Pty Ltd. Being the social butterfly types, Andrew and I were not wont to discuss the intricacies of our programming tasks when in the comfort of our Coogee abode. However, we were aware that each was involved with the development of software packages for inventory control.

Three weeks ago, it came to the attention of my manager, from reading the computer pages in *The Australian* newspaper, that our competitor Australian Video Software was developing a software package which, like our own was aimed at the video hire outlet market. It was rumoured that the package potentially provided extra functionality, was easier to use and was to be made available at a lower cost.

Somewhat concerned, my manager (aware of my association with Australian Video Software), demanded that I investigate the rumour and prepare a brief to reach her desk by the following Friday. She was quite testy about it all and stated bluntly that my performance in this matter would reflect strongly on my next salary review. In the light of the current restructure of Software Buccaneers and the fact that my work mates were being retrenched left, right and centre, I was more than a little concerned.

During the following four work days I exhausted a range of information sources with limited success. By the following Thursday the stress levels were high.

Now Andrew being the committed IT professional that he is, had been working at home on our communal PC which resides in the living room. Andrew had left some documentation and software on the PC and had flitted off to visit the University Bar. As a last ditch effort, I decided to have a quick look.

To my relief, the documentation outlined a physical design for a certain video hiring system. I perused it at my leisure, took a few notes and had the requested report briefing my manager on the product on her desk the following afternoon.

In the past two weeks, Australian Video Software has gotten wind of this report and the means by which it was prepared and has demanded that I be sacked. Australian Video Software is threatening to press charges. Tonight you will witness the board room scene to consider my future employment with Software Buccaneers and hear the arguments for and against my actions.

Emma Beames
Programmer/Analyst
Software Buccaneers Pty. Ltd.