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Professionalism in ICT: meeting the challenge of ethical dilemmas in the workplace.

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Abstract
Swinburne University of Technology offers a final year subject that explores ethical issues related to the ICT profession. A major objective of this subject is to consider ethical issues in the workplace. This study reports how the ICT ethics subject has impacted on graduates' capacity to adapt to ethical dilemmas faced in the workplace. The qualitative perceptions of past graduates were obtained via interviews. The interviews focused on ethical issues faced in the place of employment and how useful the Swinburne subject was in dealing with these matters. The strengths and weaknesses of the subject were explored during the interview, providing the basis for future enhancements of the curriculum. A particular focus within the subject is on the Doing Ethics Technique. Further research is needed to better adapt the technique to the needs of professionals in the workplace.

Keywords
Professionalism, Doing Ethics Technique, teaching ICT ethics.

INTRODUCTION
In professional practice today there are many situations where it would be helpful to have a particular way of sifting through issues to determine appropriate courses of action. For example, Preece (2002) said that 'The womb is like an ethical war-zone. Embryonic stem-cell research, deaf lesbians choosing deaf-babies, IVF embryos chosen and conceived to save existing children, single and lesbian women accessing IVF. Hardly a day goes by without a new ethical dilemma. The pace of technological change and precedent makes it almost impossible to keep up.'

Can professionals be taught ethical decision making? Can a student learn to act ethically through tertiary studies? Students entering such courses are often sceptical. To paraphrase them, students say things such as:

- I have learnt ethical behaviour in the home of my parents. One semester here is not going to change years of growing up.
- In the workplace I will be a learner, I will be expected to behave as they do and learn from them. I have no place telling them how to conduct themselves, just because I completed a semester of ICT ethics.

This paper presents the results of a preliminary investigation into the impact of an educational subject taught at a university on professional ethical behaviour. It also explains particular teaching methods used in that subject that have been shown to aid people in ethical decision making (Simpson and Burmeister, 1998; Simpson, Nevile and Burmeister, 2003). Data was collected in interviews to compare the learning outcomes with past graduates, now employed in the Information and Communications Technology (ICT) industry. The paper concludes with suggestions of how the subject and teaching methods can be extended to suit professionals, and to better prepare students for professional life in ICT.

BACKGROUND
At Swinburne University of Technology, 'Professional Issues in Information Technology’ (PIIT) is taught to all final year ICT students. It can be taken by students from various Faculties as an elective, although students without industrial experience are strongly discouraged from taking the subject. PIIT is usually the only subject that incorporates ethics in their computing courses. Despite their lack of familiarity with workplace ethical issues, almost all students, after finishing the subject, rate it as one of the most valuable to their professional development and one of the most enjoyable in their course.

Over the past 15 years the subject has evolved (Simpson and Burmeister, 1998; Simpson, Nevile and Burmeister, 2003). The focus has shifted from straight lectures to exploring real cases that confront professionals in the workplace. Many of these are introduced by guest industry speakers, brought in to demonstrate to students that PIIT topics are ones really faced in professional practice. However, students have often expressed difficulty in thinking through ethical situations. Early attempts to help students in this regard followed a case study approach. Typically with the case study approach, there is an appeal to some standard,
such as a code of ethics, a code of professional conduct or a code of professional practice. This approach is common in the literature, for helping professional make ethical decisions (Anderson et al., 1993; Burmeister, 2000; Bowern, 2003). While this approach is helpful, it is insufficient.

As a result of this the ‘Doing Ethics Technique’ was developed (Simpson, Nevile, and Burmeister, 2003). This technique builds on the case study approach, by utilising scenario analysis. Although the technique was developed for student use, it is also applicable to industry [as illustrated in an adaptation of the technique reported in Nevile and Burmeister (2003), and Nevile et al. (2003)]. This paper will discuss an evaluation of graduates of the PIIT subject and in particular the ‘Doing Ethics Technique’. It is to be noted that at the time the graduates who were interviewed, left Swinburne University of Technology, the technique had not been defined in terms of the name that is now applied to it, the ‘Doing Ethics Technique’. The following section will describe the ‘Doing Ethics Technique’.

THE DOING ETHICS TECHNIQUE

The technique of analysis depends upon asking questions. It has been found that the order in which the questions are asked is also important.

Q1 What is going on? – What are the facts?
Q2 What are the issues?
Q3 Who is affected?
Q4 Hence, What are the ethical issues and implications?
Q5 What can be done about it? - What options are there? and
Q6 Which option is best? – and Why?

An injunction to 'think ethically' about a situation is not helpful. Perhaps if one has a background in moral philosophy this would work, but usually both students and ICT professionals require some form of guidance as to how to achieve an appropriate outcome. The technique has proven itself as a means to achieving this.

This approach is not dependent on a particular standard, such as the code of ethics of a particular professional society. It is a technique that can be applied in a variety of circumstances, not limited by technological, cultural or religious background.

The approach is not limited by one's moral philosophy. One can use this technique effectively and be an objectivist, holding that certain moral truths remain good independently of personal likes and dislikes, or a relativist, holding that truths are relative to the individual or one's culture. Similarly, this approach can be used by consequentialists, holding that consequences determine if something is ethical, and by deontologists, holding that some things, regardless of the consequences, are right or wrong in themselves. The technique is a means of arriving at an ethical outcome.

THE SELECTION OF GRADUATES

For this preliminary study into the effectiveness of the ethical teaching for professional practice, a small ethnographic investigation was conducted. For pragmatic reasons a sample of convenience was employed. Many graduates had moved interstate or overseas. Therefore, those known and available were contacted. This convenience sampling is a limitation of the study. A total of five graduates were contacted, including four males and one female. The 20% female representation is close to the enrolment profile in Bachelor of Information Systems/Bachelor of Information Technology programs at the case study University.

Interview Questions Asked Of Graduates
1. What were the main strengths of the Professional Ethics subject from the perspective of gaining theoretical knowledge regarding professional ethics?
2. What were the main weaknesses of the Professional Ethics subject from the perspective of gaining theoretical knowledge regarding professional ethics?
3. What are the opportunities for improving the subject?
4. Have you ever faced any ethical professional dilemmas at your workplace following graduation? If so, please provide some examples of them.
   In the Professional Ethics subject a particular technique, now called the ‘Doing Ethics Technique’, was employed to help students think through difficult ethical situations. Did you employ the technique and if so what were the results? If you didn’t use the technique, what techniques (if any) did you use to resolve ethical situations you confronted?
5. Did the Professional Ethics subject provide you with the necessary knowledge and skills to deal with workplace ethical issues? If so, in what way did the subject assist you in dealing with the ethical issue?

The following section will discuss the results of this study.

CASE STUDIES
Graduates interviewed were between 23 and 26 years old and had either completed Bachelor of Information Technology (BIT) or Bachelor of Information Systems (BIS) at Swinburne University of Technology. Four out of the five participants have approximately 3 years ICT work experience including 1 year of Industry Based Learning which was incorporated into their BIT program. The remaining respondent has approximately 2 years work experience.

The reader ought to also be aware of the potential biases of the researchers. One author is a graduate of the BIT program, currently working in the ICT industry. The other author is an academic who has been involved in teaching PIIT from time to time.

Strengths Of The Professional Ethics Subject
Primary strengths of the Professional Ethics subject from the perspective of gaining theoretical knowledge regarding professional ethics were identified as follows:

- Open forum tutes were better than the standard textbook approach as there was enhanced learning through interaction rather than boring textbooks. Additionally, the use of real life scenarios gave the respondent an insight as to how graduates can attack certain workplace situations in the future;
- Debates and presentations were beneficial in terms of building better public speaking skills;
- The subject was comprehensive - the course content extended through a range of ethical issues and topics. Additionally, it highlighted real world issues from an ICT professionals point of view and provided a theoretical framework for a professional to build and develop upon; and
- It was an independent forum to raise ethical issues with the safety and openness that one mightn’t get in a work situation.

Weaknesses of the Professional Ethics subject
Core weaknesses of the Professional Ethics subject from the perspective of gaining theoretical knowledge regarding professional ethics were identified as follows:

- There is a lack of industry connection – scenarios are not in the context of work experience and it is less easy to see how the different players might come into it and to consider the pressures of a work situation. Scenarios and role playing roles are ok; however, decisions are somewhat disconnected from the work environment.
- There was a lack of enforcing open participation. There was always a small number of students that interacted in tutes and the others would refrain;
- There is a lack of ability to follow up over the long term and there is no chance to revisit specific issues that have be raised earlier in the course;
- It was unclear in many cases what was a project management issue (poor planning leading to failure) or an ICT issue (poor implementation leading to failure); and
- The subject was mostly theoretical - it gave you a theoretical understanding however dealing with ethical situations in a practical context is different. It is not quite as clean cut and there is more emotional involvement in a workplace situation as well. The subject does not prepare you for that aspect of a workplace situation.

Further improvements to the Professional Ethics Subject
Further improvements to the subject were suggested:

- There should be a heavier weighting on class participation i.e. there needs to be more emphasis on discussions than written content;
- A second year ethics subject should be introduced to the BIT course. A year’s gap between the two subjects would be ideal, so that students can review issues identified in the first subject. Hence, students are formulating an ethical conclusion from what they studied earlier rather than what they have learnt themselves;
- The subject should address more general workplace ethical issues instead of just ICT ethical issues;
• The theory did not thoroughly manage what was ethical behaviour, and what was a mistake or an effect of something that could not be foreseen; and
• Introduce a practical task where a student figures out what ethical issue in ICT they are passionate about and present that case in a classroom scenario where they are open to being questioned about it, have a debate about it, etc. It is not going to have still the same impact as it will in a real life situation. However, it is probably as close as a student will get to a real life situation in a Professional Ethics subject.

How graduates have dealt with ethical issues and whether they have utilised the ‘Doing Ethics Technique’
One participant employed the ‘Doing Ethics Technique’ when the respondent faced an ethical professional dilemma at the graduate’s workplace following graduation. Though the technique was adopted, it was not followed rigorously and in no specific order as detailed below:

Q1 What is going on? – What are the facts?
• The graduate was employed at a company (company1) that was facing receivership;
• An international company (company2) based in Malaysia was born out of company1;
• Shortly before company1 declared itself bankrupt, company2 paid a substantial amount of company1’s bills etc., which bought them equity into company1;
• Both hard and soft assets were shipped to Malaysia, including the intellectual property (IP) developed by the graduate; and
• Company2 offered the alumnus a job with them, reengineering Company1’s IP to suit their back end software.

Q2 What are the issues?
They were evasive and clear:
• Should the graduate accept a job with a company which obviously was involved in dodgy dealings with Company1?
• Should the graduate then proceed to reengineer Company1’s IP to suit Company2’s back end software?

Q3 Who is affected?
• Creditors of Company1 who would not receive money owed to them as a result of Company2 ‘buying’ Company1’s hard and soft assets;
• Company1’s staff that was unaware of the dubious transactions between Company1 and Company2, or even the financial situation of Company1; and
• Company2’s staff and the staff that moved from Company1 to Company2, that were unaware of the dubious transactions between Company1 and Company2 and whether Company2’s actions were sinister towards Company1.

Q4 Hence, What are the ethical issues and implications?
• Should the graduate continue working for Company1 given the value he represented to Company1?
• Should the participant accept the job offered with Company2 given their risky dealings with Company1?
• Should the alumnus incorporate the source code from Company1 to Company2’s back end software?

Q5 What can be done about it? - What options are there?
• The participant can either leave Company1 and work for Company2 or find employment with another company;
• If the graduate accepted the job offered with Company2 the respondent would have the following options:
  o Move to Malaysia and work at the head office; or
  o Stay in Melbourne and work from home.
• The graduate can either choose to incorporate the source code from Company1 to Company2’s back end software or not.
  o If not, the respondent can develop a new solution to suit the needs of Company2;
Q6 Which option is best? – and Why?

- Given that no other employment was available, the graduate accepted the job with Company2;
- The alumnus chose to live in Melbourne and work from home, as the respondent felt it was easier to focus
- Incorporating Company1’s source code for Company2 would have been unethical; and
- The participant chose to target Company2’s requirements and formulate complete documentation without giving away any IP as this seemed most appropriate activity in a business sense. Additionally by following the System Development Life Cycle it would have made the new solution more personalised and better documented for future development.

Other graduates have not followed the ‘Doing Ethics Technique’ as outlined in the subject. An ethical dilemma that a respondent has faced was a disclosure issue. A manager approached the alumnus and wanted a detailed report of what mobile calls were made, number tracing for the employees landline, whether corporate numbers were being called, and email addresses the employee was communicating with. The graduate did not follow the ‘Doing Ethics Technique’ in this situation. However, the respondent reviewed the company’s ICT policy and subsequent legislation and verified the following:

- Who had the right to the information requested;
- What authorisation was required to access the information requested; and
- Even with sufficient authorisation, whether that information was protected by company privacy policy.

As a result of the participant’s investigation, they met with the manager that requested the report and informed them they could not access the information as it would breach company privacy policy.

**How The Professional Ethics Subject Has Provided Alumni With The Necessary Knowledge And Skills To Deal With Workplace Ethical Issues**

The Professional Ethics subject developed one respondents existing knowledge and skills on workplace ethical issues. The graduate believes that everyone already has essential knowledge and skills to deal with ethical issues. The Professional Ethics subject aided the alumnus in building on framework and background knowledge, and to be confident about a decision concerning ethical issues and cope well with making them. The Professional Ethics subject opened up the area of ethics more as the participant became aware that there were standards and mechanisms one can follow professionally for workplace ethical issues people face daily.

One participant believed that the professional ethics subject provided the graduate with necessary knowledge to deal with ICT ethical issues, but not knowledge to deal with workplace ethical issues. For example, the subject explored stealing code, ideas, hacking, and other issues, but not general ethical issues that ICT professionals would still face, such as the ethics of calling in sick when you are not, taking workplace supplies, lying to bosses, covering up mistakes, redundancies, and more.

The Professional Ethics subject provided an alumnus with a skeleton of knowledge on workplace ethical issues. The subject provided the participant with what they should consider in workplace ethical issues, and who they should contact. However, the subject did not provide the respondent with necessary skills and knowledge to any degree of detail. The graduate believes that they can learn better through practical application of their knowledge than through theoretical study. However, the participant did appreciate the skeleton structure that the subject provided.

**ANALYSIS OF RESULTS**

The main themes identified in the strengths of the Professional Ethics subject from the viewpoint of acquiring theoretical knowledge regarding professional ethics was the provision of theoretical underpinning of professional ethics. This was balanced by more practical and applied knowledge created not only as a one way process from lecturer to students, but also through student to student and student to staff interactions in classes through the use of scenarios and classroom debates.

Shared themes established in the weaknesses of the Professional Ethics subject from the position of obtaining theoretical knowledge concerning professional ethics, included a perceived need for greater realism including inputs from industry. Additionally, a better balance between the theory–practice continuum, but perhaps being closer to the right of this spectrum would have assisted the ICT graduates to cope better with the ethical dilemmas faced in the workplace.
Improvements in the subject that were commonly identified included the improvement of assessment—weighting more heavily on practical aspects. Furthermore, there should be a greater emphasis on applied practicum/industry than theoretical knowledge in classes.

The ‘Doing Ethics Technique’ does not appear to be widely adopted by graduates. This technique may need to be adapted and/or revised in view of the opinions experienced by the case study graduates.

Overall, the subject appears to have provided adequate knowledge to deal with ICT ethical issues. However, workplace ethical issues were somewhat lacking according to survey participants.

It should be noted that all respondents have only limited employment experience of up to three years. Further, owing to the downturn of the ICT industry most of the participants are working relatively task oriented junior positions with lesser exposure to more complex ethical dilemmas. Most of the graduates felt that there was too much theoretical content in the Professional Ethics subject and expressed a desire for greater practical applications. However, it is clear that the theoretical foundations established from studying the Professional Ethics subject have assisted them to reflect on the concept of ethics when ethical dilemmas arise, thereby facilitating the problem solving. It will be informative to undertake further survey with these students in say five years time once they have reached the management level. Such a study would permit temporal comparisons of ethical dilemmas in the workplace.

CONCLUSION
The results of the survey confirm what has been argued elsewhere (Nevile and Burmeister, 2003; Nevile et al., 2003), that in its passive state, the Doing Ethics Technique does not sufficiently address the needs of people working through ethical dilemmas. Nevile et al. (2003) explored an active variation to the technique in the domain of online accessibility, that may signal the way forward. The Doing Ethics Technique has been an important step forward in guiding student ethical decision making, but the results obtained in this study seem to indicate that further refinements are needed to make it useful to the ICT professional. Further research is also required to determine if the active variation of Nevile et al. (2003) is a better solution. Nevile et al. (2003) put forward the notion that different stakeholder viewpoints need to be considered in an active way; active being defined as a team-based resolution to ethical dilemmas. Nevile et al. (2003) did not have empirical data to back their ideas, their research was based on a review of the literature and on practitioner conjecture. The first bullet point in the weaknesses section above appears to confirm this notion; that is, a weakness in the Doing Ethics Technique is that different workplace viewpoints are not taken into account. Further work is needed to find an effective solution to this weakness.

One weakness of teaching ethics, identified by participants in the survey, is the lack of follow-through for graduates. An innovative solution here might be something the Australian Computer Society (ACS) did in March 2002. Each year the ACS hold their national conference and in conjunction with it hold a one day series of events for new graduates (those working 12 months or less in ICT) and students. In 2002 this involved an afternoon session where those present (over 100 young people from all over Australia) analysed 2 case studies, with the help of a panel of industry experts. This approach could be the solution to the weakness of follow-through identified by survey participants. That is, rather than individual universities attempting to conduct follow-through with past graduates, wider acceptance and better understanding of the workplace issues, could be achieved through the professional society taking on this responsibility.

REFERENCES


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