
Teaching information ethics at second year degree level at the University of Pretoria: a case-study of integrating theoretical information ethics with practical application

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Abstract

Practising ethics has been an important consideration since Aristotle, with particular reference to his Nicomachean Ethics. He based his entire philosophy on understanding the nature of ethical interaction between people. Conversely, nowadays teaching ethics is a more complicated task when basing one's considerations on Aristotelian ethics, because, according to Aristotle, ethics cannot be taught. Virtue can only be practised by means of habituation which is similar to stating that one cultivates virtues. Therefore, by means of habituation ethical character can be developed.

Reinterpretation of this in the modern day classroom or lecture hall can be challenging. This is experienced first-hand by the authors of this paper, who are involved in the teaching of an undergraduate module in information ethics. The concern encountered was not due to the lack of content, but rested on the inability of students to internalise the information ethical considerations. As a result, the students found it difficult to critically reflect on and practically apply what they have been taught. In response to this the authors endeavoured to implement a practical component to the module to provide an opportunity for the students to engage more with the information ethical issues of an Information Society. The aim of this article is to discuss the implementation of

the practical component, considering the overall theoretical information ethical framework. Thereafter recommendations will be made as to the improvement of this dual structure.

The module was presented over a period of one semester and consisted of both practical and theoretical components. The themes covered during the theoretical component ranged from the foundational concepts related to information ethics; ethical issues of an information society such as privacy, access and intellectual property; intercultural information ethics; social justice and social responsibility. Through the use of a practical portfolio to support the practical component, the students were encouraged to select one topic from any of the themes, on which they had to do research for various objectives: 1) writing a conference abstract; 2) presenting the research in a conference setting; 3) compiling a first draft and final conference paper; 4) designing a conference poster, and 5) formally reviewing each other's work.

The results revealed that the students were more able to engage with the theoretical content as a result of the practical components. In turn, the practical component also enriched the students' understanding of the theoretical content, informing their class discussions and overall quality of work. The authors recommend a similar approach to any other applied ethics course.

Introduction

Since the days of Aristotle, the ability to practice ethics has been an important consideration. His philosophy of Nicomachean ethics was based on understanding the nature of ethical interaction between people (Anagnostopoulos 1994). However, even Aristotle was adamant that ethics could not be taught, but rather practiced by means of cultivating virtues through habituation (Anagnostopoulos 1994). This realisation that ethics cannot easily be taught can be seen in modern day teaching of ethics. To create an environment where ethics can be practiced in the classroom can be extremely challenging. In many situations, students refer to their pre-existing understanding of morals and virtues, drawn from their culture, religion, upbringing and community environment to describe an ethical action (Emerson & Conroy 2004). This reference to personal experiences often conflicts with what a lecturer teaches about ethical behaviour in society, creating a disconnect between lecturer and student. With no ability to apply practically what is being taught and opening up the dialogue to discuss viewpoints and understanding of

ethics, students may find themselves alienated and withdrawing from the discussion all together.

This challenge was experienced first-hand by the authors of this paper, who are involved in the teaching applied ethics in an undergraduate module in information ethics. The concern encountered was not due to the lack of content or the ability of student to understand the context of the work, as the majority of the students are studying information technology, computer science and information science. Rather, as experienced in previous years, the concern was a result of the inability of students to internalise the content they learnt during the theory component of the lectures and apply it to real life situations. The goal of the authors therefore was to restructure the course to promote critical thinking in the students to assist them in internalising the content they learnt, and taking it with them into the workplace one day to help apply ethical judgment to daily situations.

This paper explains how the authors went about restructuring the course to achieve the above mentioned goal, what inspired the change and what the observed results were after one semester.

Background

“Information ethics is a descriptive and emancipatory discipline dealing with the study of the changes in the relationship between people and the world due to information and communication technologies. Information ethics in Africa provides a unique platform to build an Information and Knowledge Society driven by critical reflection on ethos and values within the African Context. It addresses opportunities and challenges unique to the development of African societies” (2011 ANIE Workshop on Information Ethics in Africa cited on ACEIE 2013).

While information ethics has been a point of research and discussion in developed nations for a number of years, in Africa it is still a very young field (Capurro 2007). As a result, many universities and institutions find themselves searching for new ways to teach information ethics in an effective manner. The authors of this paper were no exception to this.

At the 3rd African Network for Information Ethics (ANIE) International Conference offered a platform to assist in filling the gaps felt by educators. During the conference the following two themes were the focal points:

- The Development of a curriculum to teach Information Ethics at universities in Africa; and
- The Cheetah Generation's Fast Track towards Social Media and Information Ethics in Africa.
- The pre-conference workshop, focusing on an Information Ethics curriculum, took place on 3 and 4 September 2012, whereas the conference itself took place 5 to 7 September 2012. During the workshop, participants from different African countries were given the opportunity to give feedback on their status, progress and/or plans of implementing an Information Ethics curriculum at their institution. Nearly every institution was at a different implementation stage due to the unique student demographics and administrative procedures of their institution. However, a few common issues between these institutions were identified:
 - There is a clear need for an Information Ethics curriculum on both undergraduate and post-graduate levels;
 - A linear content approach (foundations to current issues) is also important in order to give a broad overview of Information Ethics, depending on the allotted timeframe (quarter/semester/year module);
 - An integrative approach (theoretical and practical components) is necessary to teach Information Ethics holistically [perhaps a better word here];
 - Interactive methods need to be employed such that interaction between the students and lecturers are encouraged; and
 - More research, on both Information Ethics and the implementation of an Information Ethics curriculum, is needed.

Based on these common issues, the authors decided a pro-active approach at undergraduate level, is of utmost importance. Pro-active in the sense of a) actively endeavouring to constantly improve the curriculum structure and content and b) actively encouraging students on an undergraduate level (as opposed to the predominant focus on post-graduate students) to understand the information ethical considerations of their study fields. This attitude links to the theme of the 3rd ANIE Conference: *The Cheetah Generation's Fast Track towards Social Media and Information Ethics in Africa*, because, success in this relatively new academic field (Capurro 2007) will only be achieved when innovative methods are aligned with the fast paced lifestyle, technological advancements and instant access to information of this day and age.

Approach

The authors are both based at the Department of Information Science at the University of Pretoria. The first author is a junior lecturer in Information Ethics and the second is a researcher (and assistant lecturer) at the African Centre of Excellence for Information Ethics. Taking the common identified issues into consideration, they embarked on a novel project as part of the implementation of a practical component in the current undergraduate Information Ethics curriculum. Applying each lecturer's strong points (experience in lecturing information ethics and background in philosophical foundations, respectively), the needs of the second year information ethics module were re-assessed. One of the main issues with the second year undergraduate module was that it carries the highest credit weight of all second year core modules in Information Science and Computer Science degrees. It was a concern that not enough practical application of the module was offered to warrant the credit weighting. The first obstacle was encapsulated by the following question: "How do you make Information Ethics a practical issue?" Practical Information Ethical considerations are easy to identify, such as plagiarism, intellectual property issues, privacy issues in social networking environments and even whistle blowing. The problem is how one introduces and teaches these practical issues as part of a practical component of a theoretical module? To solve this problem, the authors analysed their own personal experiences within the academia to find a gap. They had both observed how each had their first conference and article experiences only during their postgraduate Masters studies, and did not feel wholly prepared for this. If they had an opportunity prior to their Masters to present research in a conference setting, then they would have approached these academic events in a more informed and prepared manner. Through this, the researchers were able to identify a gap in academic training, namely the inexperience of students in conducting and handling research.

The second obstacle was to prove how fulfilling this gap, namely that of teaching students how to present research in a conference setting, would also assist students to practically internalise information ethical issues. When undergraduate students conduct research, the learning experience is enhanced further than what is gained during coursework classes (ACU 2013; OSU 2013). Knowledge that is developed in the classroom is strengthened and internalised when students are able to apply it to their research, therefore leading to better understanding and appreciation for the discipline (ACU 2013; OSU 2013). The importance of this is further demonstrated by the definition of Information Ethics. Giving students the opportunity to prepare and present a conference

paper on research based on their choice of any information ethical issue allowed them to critically analyse the ethos and values surrounding the issue and study the relationship between people and ICTs. The project also helps them grow as critical, analytical and independent thinkers and promote lifelong learning, teaches students effective information evaluation, and the importance of avoiding plagiarism (OSU 2013).

The steps in guiding the students through the research and conference paper are discussed further in the rest of this paper.

Delimitations of the study

The authors do not have any professional background in curriculum development and did not partake in any other activities providing them with the expertise of such an endeavour. However, together with the experience gained in previous years through course development and teaching, they did consult the following individuals, who, without their support and guidance, this endeavour would not have been successful:

- Prof Theo Bothma – Head of Department, Information Science, University of Pretoria;
- Dr Marlene Holmner – Senior Lecturer and Course Coordinator for Information Ethics at Honours level, Information Science Department, University of Pretoria;
- Dr Cecilia Penzhorn – Senior Lecturer in Information Ethics, Information Science Department, University of Pretoria; and
- Mr Coetzee Bester – Director, African Centre of Excellence for Information Ethics (ACEIE).

Furthermore, it should be noted that the aim of this endeavour, and subsequently the aim of this paper, is not to prove the basis of any particular departure point towards teaching Information Ethics. Rather, it is to show that innovative ideas within a curriculum structure can have exciting and constructive outcomes. Steps to conduct more formal assessment on this approach of teaching have been taken for next year.

An information ethics curriculum – the status of the University of Pretoria

The University of Pretoria has a rich history in teaching IE. Originally established in the Information Science Department at undergraduate level in 1990, Information Ethics is now in 2013 taught at two levels: 1) at undergraduate level as a second year semester module and 2) at post-graduate level as a Honours semester module. Hence the University of Pretoria has already acknowledged the need for an Information Ethics curriculum, albeit semester modules. The focus of this paper is purely on the further development and restructuring of the under-graduate Information Ethics module, at second year level.

A linear approach

The timeframe for the under-graduate module is a semester module and there are approximately 12 weeks during which the entire course must be taught, with three theory classes per week. This translates roughly into 36 contact sessions¹. As mentioned under earlier ‘A linear content approach (foundations to current issues) is also important in order to give a broad overview of Information Ethics, depending on the allotted timeframe (quarter/semester/year module)’; the lecturers agreed that such a linear approach was necessary. Some assumptions were made to guide the lecturers’ reasoning and approach to this module: a) the students, being second years, are most probably not acquainted with (Philosophical) prescriptive ethical theories, and hence require an introduction to these theories, and b) the class, being comprised of a mixed group of students – Information Technology, Information Sciences and Computer Sciences – do not necessarily have the same backgrounds, fields of interest and academic focus areas, therefore, the lecturers needed to ‘cater’ for the entire class. This was not an insurmountable obstacle, but indeed a daunting task when considering that a new approach would be implemented forcing the students to participate even more than usually required.

The above mentioned assumptions led the lecturers to argue that the students needed an ‘Information Ethical Toolkit’ to support them in their professional (and personal) environments after graduation. Since ethics is about the practising of virtues [Aristotle’s reference] and the forming of good habits, so the students must be empowered with this toolkit. The toolkit was created in the form of a house (see figure 1), hoping that students will remember this structure (Hommes & Bothma 2013). This Information Ethical house provided the basic

structure of the syllabus and subsequently the thematic exposition of the semester.

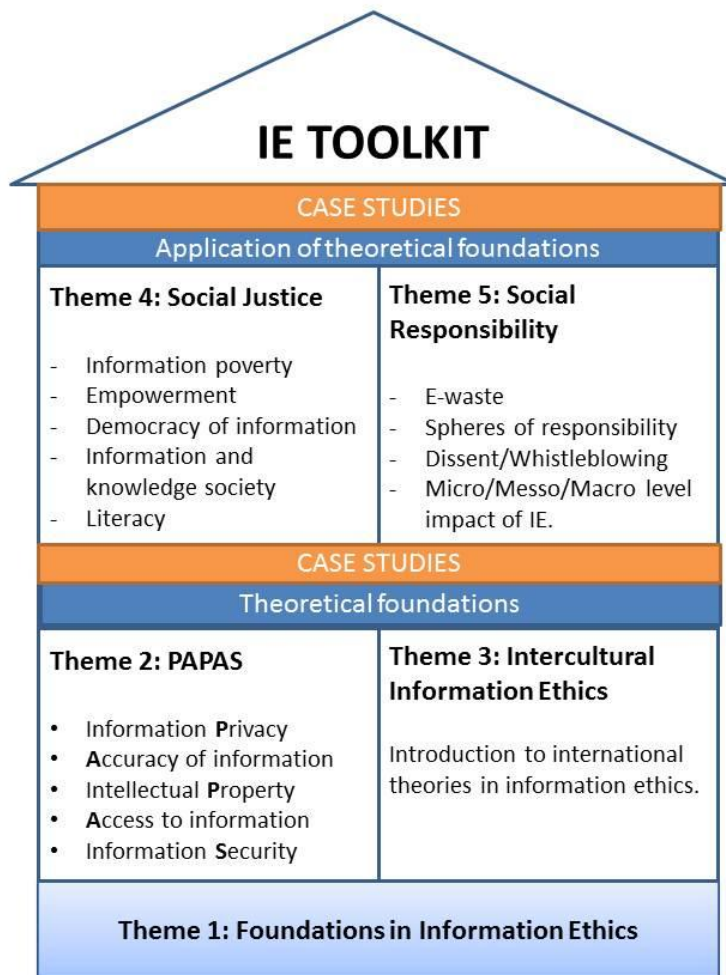


Figure 1: Information Ethics Toolkit (or Information Ethics House):

The toolkit illustrated in figure 1 is still a work in progress as the content, and understanding/perspectives of the content develop. The toolkit aims to illustrate to the students how each theme of work builds on the other, drawing the “golden thread” through the coursework in its entirety. The semester course begins with the philosophical foundations of information ethics – a new concept to most of the students – and then builds on with the information ethical issues as outlined by Mason (1986) and Freeman and Peace (2005). This is followed by a theme on Intercultural Information Ethics, based primarily on works by Capurro (2007, 2008), the ACEIE (African Centre of Excellence for

Information Ethics), and Wong (2009). The fourth theme, that of Social Justice, is a new theme introduced in 2013. This theme is still being developed, but is largely based on the works of Britz (2008) regarding social justice and the information and knowledge society. The fifth theme of social responsibility, similar to social justice, is also in developmental stage, and includes current issues such as e-waste, derived from research done by, whistleblowing and open access to information. The importance of this house was not only to demonstrate the relationship between themes in information ethics, but to also give students a starting point in choosing what topic they would like to write their conference paper on.

An integrative approach

Integrative learning approach involves connecting skills and knowledge from different sources, or applying knowledge to different situations in order to understand context specific issues (Huber, Hutchings & Gale 2005). It is essentially making connections within a field between academic knowledge and practice (Huber, Hutchings & Gale 2005). In the second year information ethics module, this approach refers to the introduction of a practical component to the theoretical component. The practical component must not only support the theoretical component, but it must also contribute in its own way to Information Ethical awareness. As mentioned earlier, although there are practical issues concerning Information Ethics, it was not clear how one could convey this into the practical sessions with the second year students. The lecturers had two departure points in their approach to this practical component: 1) the lecturers argued that they would have appreciated conference and article-writing exposure at an earlier stage of their academic careers (i.e. already at undergraduate level) and 2) they had a class of approximately 220 second year students who were going to receive this exposure in less time than one usually gets for conference preparation and participation and article submission.

The 220 students were divided into groups of five to six students per group and were assigned six deliverables to be completed by the end of the semester. The following outline was provided:

Aims

- To develop research and writing skills in the field of Information Ethics;
- To develop presentation skills;
- To develop a conference paper for presentation; and

- To develop a poster for presentation.

Deliverables

There are six deliverables in the practical component of the second year Information Ethics module (INL 240) for 2013:

"Call for papers" abstract (300 words)

This deliverable consisted of two parts:

- A five minute presentation by group members on their choice of topic, problem statement and roles and responsibilities of group members. Presentations took place over 2 weeks.
- A 300 word abstract outlining what the conference paper will be about had to be submitted at the end of the presentation weeks.

"First article draft submission" (2000 words)

This deliverable consisted of 3 parts:

- A presentation on the group progress with research, including a literature review of at least 10 sources.
- A draft paper of 2000 words of research completed up to that date.
- Submission of feedback on group presentations attended.

Final conference paper (3000 - 3600 words)

This deliverable consisted of 2 parts:

- A final conference style presentation of the research. Allotted time for each presentation was 5 to 7 minutes.
- Submission of final conference paper of 3000 words (for groups of 5) and 3600 words (for groups of 6).

Conference poster

- A poster showcasing the group's research was to be created for a poster presentation in a conference setting.

Review of another groups' paper

- A full conference paper review of another groups' work must have been done by each group.
- A review rubric was provided for this deliverable for this. It was emphasised to the students that all reviews must be professional and fair.

Portfolio of work

A portfolio/research handbook was compiled by the lecturers to support the students in the practical component. The portfolio consisted of six sections, correlating with each of the six deliverables. Since no such format was previously compiled, the lecturers compiled it with the help of other lecturers in the department and other useful sources. The portfolio/research handbook had to be utilised by each student throughout the semester and should have been completed in full, to be handed in at the end of the semester. This portfolio was individual work, and would also include a peer review of the individual's fellow group members.

Research topics

The research topics were based on the theory themes that were covered throughout the semester. Therefore, these topics also correlated with the Information Ethics Toolkit. The research topics could be any of the following:

- Foundational information ethical principles and legislation
- Privacy; Accuracy; Intellectual Property; Access and Security (PAPAS)
- Intercultural Information Ethics
- Social Justice
- Social Responsibility

The topic chosen by a group could be any topic of their choice based on any of the above themes. They were reminded to keep the topics specific and not to pick too broad a topic such as PAPAS – rather they could pick one of the PAPAS

principles like Privacy and apply it in a specific context. Examples of topics included:

- Need or Greed: Piracy in an academic context
- The "Secrecy" Bill: a veil for political inner-workings
- Implications of software piracy for Microsoft in South Africa
- Information access for the disabled in South African Universities
- Access to information across rural and urban areas of South Africa: Johannesburg vs. Nkandla

These topics, and the subsequent papers, demonstrated the students' ability to connect the academic theory taught in class and the research conducted in their own time, with real life practices. In so doing, they were able to critically evaluate these real life practices and scenarios for their information ethicality and provide an academic conclusion thereof.

Interactive methods

In the initial planning stages, the lecturers discussed why students in previous years had voiced concerns over their lack of understanding of the significance of the undergraduate information ethics module. As previously stated, students seemed to not engage with or internalise the content, and this led to a lack of crucial understanding, and ultimately motivation for many students. It was therefore determined that a more interactive model had to be followed in the new program, particularly with the new practical component. To the lecturers involved, it was important that the practical component remained interactive for two reasons: 1) The students had no prior experience in research and conference paper writing, and would therefore need guidance, and 2) the lecturers themselves had not conducted a practical like this before, and would require feedback from the students at all times to ensure there was an understanding of expectations.

Abrahamson (n.d) lists three reasons for following an interactive teaching model. His reasons include the summative aspect, the formative aspect, and the motivational aspect. Applying these three aspects to the new structure of the second year information ethics curriculum, one can see the potential success in such an approach.

The summative part is determining what the students are actually thinking. This was done through regular practical sessions where the work was presented and

students were able to interact and receive feedback on progress, open class discussions and an open door policy during office hours for any queries. The second formative part was assigning the project to students from the beginning of the semester for them to conduct their own research throughout, allowing them to think through the issues as the semester theory work progressed. The third aspect, the motivational aspect, was promoted through academic reward. As the semester progressed and the level of work exceeded expectations, students were informed that the group with the best conference paper and presentation in the simulated student conference would be selected to present at another student conference in their professional capacity. This proved to be a hugely successful motivational factor, and the majority of students performed beyond expectations.

Recommendations and conclusion

Information ethics is an invaluable discipline in the current information and knowledge society. However teaching information ethics can be challenging, particularly amongst diverse groups of students from various disciplines. The authors were faced with the challenge of implementing a new practical component to complement the theory in their undergraduate information ethics module. To help determine how to practically apply the theory content, they looked at their own experiences. They argued that there was a gap in research training at undergraduate level that prepares students for writing and presenting conference style papers. Thus they implemented an interactive practical curriculum that took students step by step through the research process. The authors recommend that this project be implemented again in 2014. This is supported by a general positive response from students after an informal course feedback session was held, as well as several letters received by students over email stating how much they valued the practical component of the course. However, some important lessons were learnt in 2013. Primarily, time became a challenge with such a big group of students. Certain aspects in the course must be streamlined, for example:

- More defined rubrics for quicker marking and feedback;
- Earlier deadlines to allow lecturers more time for feedback;
- More options for peer review need to be investigated;
- More industry involvements, possible at mentorship level.

Overall, the authors believe that this model for practical application in an information ethics undergraduate course could be very successful, and look

forward to repeating the program again next year, in conjunction with more formal research to measure the success.

References

- Abrahamson, L. n.d. What is interactive teaching?
<http://www.bedu.com/interactive.html> Accessed 28 July 2013.
- ACEIE. 2013. The African centre of excellence for information ethics.
<http://web.up.ac.za/default.asp?ipkCategoryID=19309> Accessed 28 July 2013.
- ACU. 2013. Why is undergraduate research important?
http://www.acu.edu/academics/undergradresearch/why_research.html Accessed 28 July 2013.
- Anagnostopoulos, G. 1994. Aristotle on the goals and exactness of ethics. Berkeley, CA: University of California Press.
- Britz, J.J. 2008. Making the global information society good: a social justice perspective on the ethical dimensions of the global information society. *Journal of the American Society for Information Science and Technology*, 59(7): 1171-1183.
- Britz, J.J. 2004. To know or not to know: a moral reflection on information poverty. *Journal of Information Science*, 30 (4), 1-14.
- Capurro, R. 2007. Information ethics for and from Africa. Keynote address at the African Information Ethics Conference, Pretoria, South Africa, 5-7 February 2007. <http://www.capurro.de/africa.html> Accessed 30 April 2014.
- Capurro, R. 2008. Intercultural information ethics. In: Himma, K.E. & Tavani, H.T. eds. *The handbook of information and computer ethics*. Hoboken, N.J.: Wiley: 639-665.
- Emerson, T. L. N., and Conroy, S. J. 2004. Have ethical attitudes changed? An intertemporal comparison of the ethical perceptions of college students in 1985 and 2001. *Journal of Business Ethics*, 50: 167 -176.
- Freeman, L. & Peace, G. 2005. *Information ethics: privacy and intellectual property*. London: Information Science Publishing.

Hommel, E. and Bothma, R. 2013. INL 240 study guide: social and ethical impact. *Course Study Guide*. University of Pretoria.

Huber, M. T., Hutchings, P., & Gale, R. 2005. Integrative Learning for Liberal Education. *PeerReview, Summer/Fall*. https://www.aacu.org/peerreview/pr-sufa05/pr_sufa05analysis.cfm. Accessed 2 may 2014

OSU 2013. Undergraduate research, scholarship and the arts. <http://oregonstate.edu/students/research/why-research> Accessed 28 July 2013.

Wong, P-H. 2009. What should we share? Understanding the Aim of Intercultural Information Ethics. *ACM SIGCAS Computers and Society*, 39(3): 50 – 58.

Endnote

ⁱ This is not the precise number of contact sessions since there are also public holidays during the first semester.