

Methods in Teaching Ethics to Students of Business Information Technology

Ch. Class, B. Frischherz, Ch. Bucher, R. Krütli
Hochschule für Wirtschaft Luzern
Fachhochschule der Zentralschweiz, Luzern, Switzerland
{cclass | bfrischh | cbucher | rkruetli} @hsw.fhz.ch

Abstract—This paper presents methods successfully applied in a one-week seminar covering ethical issues in information technologies. The methods are assessed according to their impact on the achievement of the seminar's goal. Perspectives of participating students are also included in this paper.

Computer Ethics, Didactics

1. INTRODUCTION

Information technologies affect today's economic and social relationships. But these technologies are not yet fully integrated into systems of moral values. New questions about the "right" behavior have to be answered for the information age. Technology should no longer be perceived as being morally neutral [1]. Basart Muñoz proposes that ethics should also analyze "what kind of technology is really necessary today, to what purposes and at what price" [2]. Due to the possible effects of engineering work, ethics should be included in engineering education [3]. To incorporate ethics in the business information technology curriculum at Lucerne School of Business (HSW Luzern), we offer a one-week seminar that covers ethical issues in information technologies. Each year, approximately one third of the students of business information technology have participated in this seminar. The goal of the seminar is not to give answers to ethical problems but to provide an environment in which students learn to discuss ethical dilemmas and to make their own value judgements.

To achieve this goal we use a balanced combination of several methods. In section 2 we give an overview of the seminar, its topics and teaching methods. In section 3 the methods are presented in more detail including the students' perspective as well. Section 4 summarizes evaluation results while section 5 provides the authors' conclusions.

2. SEMINAR OVERVIEW

At HSW Luzern students of the last year have to select two one-week seminars among a set of different seminars covering different topics. Every year, the described seminar has been chosen by a group of 11 to 14 students.

The seminar overview in table I shows the thematic structure and the applied teaching methods: ex cathedra teaching (T), case studies (CS), individual work (IW), group work (GW), discussions (D) and presentations and demonstrations (PD).

TABLE I. SEMINAR OVERVIEW

Monday	Tuesday	Wednesday	Thursday	Friday
brainstorming (GW) codes of ethics (T + GW)	ethics and computer science (PD + D)	person, and privacy (PD + D)	economics and law: work, globalization, and copyright (PD + D)	case studies with poster session (CS + GW)
ethical theories (T + GW)	politics, democracy, and digital gap (PD + D)	invited guest: special topic (PD + D)	invited guest: special topic (PD + D)	closing reflection and evaluation (IW)

In the next section each teaching method will be presented and commented in more detail.

3. METHODS

3.1. Opening the Seminar

The seminar is opened by a brainstorming in groups: students note keywords for actual ethical problems in general and in the field of information and communication technologies. Each group discusses relevant aspects, looks for a classification scheme for their keywords, and presents it to the other students. Finally all participants organize the keywords into a joint mind map of the groups. This mind map serves as an orientation map during the whole seminar.

3.2. Ex Cathedra Teaching

On the first day of the seminar the teachers provide inputs on basic concepts of ethical theories and professional codes of ethics. Based on these theories students learn the vocabulary for ethical discussions. Kohlberg's famous Heinz-Dilemma is a motivating starting point for discussions about the differences between *moral*, *law*, and *ethics* [4]. We also read short excerpts from well-known philosophers to reconstruct ethical principles: *virtues*, *golden rule*, *utilitarianism*, *categorical imperative*, and *discourse ethics*. We introduce different professional codes of ethics (IEEE, ACM, GI) and discuss their application on special cases.

In our experience ex cathedra teaching is an effective form of teaching basic concepts and vocabulary of ethics. Reading original texts of philosophical classics and professional codes of ethics, students often need comments and support.

3.3. Presentations and Demonstrations

Various ethical issues are presented and discussed in the seminar. Hereby the participants consider moral concerns in different areas of information and communication technologies. The presentations and demonstrations are prepared by the students. Each participant chooses an article out of a list previously prepared by the teachers and prepares a summary (2-3 pages), supplemented by own ideas, suggestions and criticisms. During the seminar, the topic is presented to all participants. Fig. 1 describes the cycle of the methodical procedures.

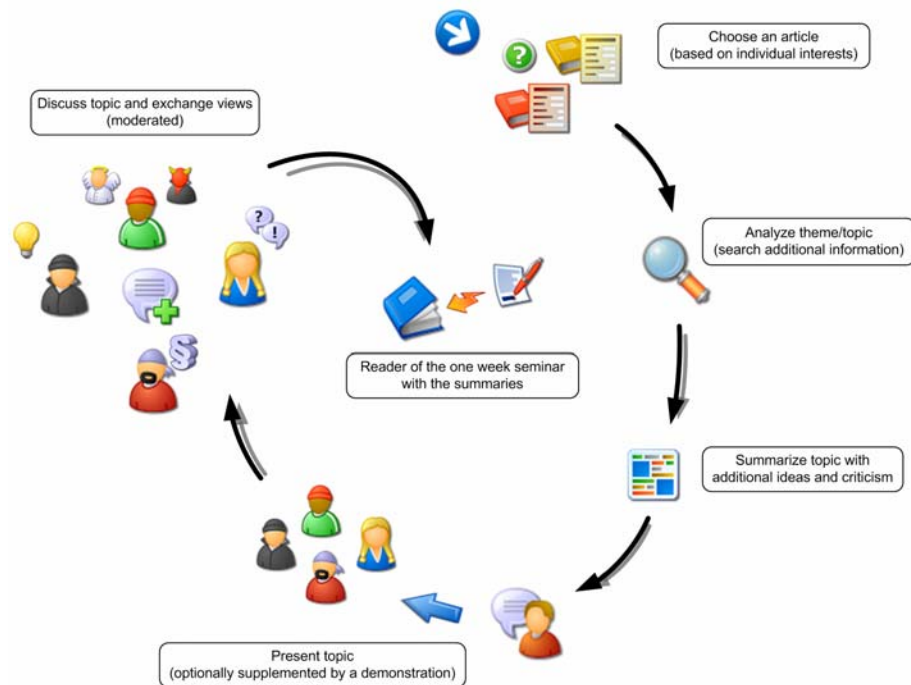


Figure 1. Cycle of the methodical procedures

Every presentation ends with a discussion about main problems and possible solutions. It is not only important to the participants to understand the topic and the problems, but it is also interesting to learn about other views and opinions. The presentation and discussion of various different problem fields offers to the students basics they need to make their own ethical decisions when faced with difficult (ethical) situations later on.

To illustrate the method “presentations and demonstrations”, we describe, how a group of three students prepared and hold their presentation:
The group chose the topic of virtual violence and its effect in the real world and kept a special eye on the violence shown in computer games.
The main source for the students' presentation was a book [5], that contains a collection of texts, discussing the relation of virtual to real violence.
Although these students are adept in computer games, they considered the book as a bit too one-sided: some articles seem nearly to play down the difficulty of the topic. To introduce also a different view of the subject, they looked for additional sources.
To give an impression of virtual violence in computer games, the presenters gave some live-demonstrations of different games (e.g. Counter Strike, Battlefield 1942, Quake 3, etc.) and showed some movies, containing scenes of such games.
This presentation was followed by a lively and committed discussion in which everyone took part and shared his impressions and views.

Presentations and demonstrations establish a solid basis for discussions. They inspire the students to build up a personal view of the presented ethical threats.

3.4. Discussions and Moderations

After every presentation a time slot is reserved for discussions. The discussions are moderated by the student(s) who present the topic. It is helpful, that the moderator(s) prepare a starting question or thesis. These discussions are a central part of the seminar as they allow students to express and reflect their own positions. It is essential to reserve enough time to discuss. We have experienced that depending on the topic the discussions tend to stray in different directions. It is an integral part of the seminar to let students influence the discussion in this way, as it allows them to discuss related moral problems they care about, as well.

3.5. Case Studies

Case Studies are a successful teaching method to develop competencies in decision making. Reference [6] provides a collection of complex case studies in different fields of computer ethics. Solving the case studies, students need to carefully consider the potential ethical dimensions of a situation they might be confronted with in their future professional careers. Students discuss one case in groups of three to four people and illustrate the ethical dilemma on a poster. This has been proven to be a good possibility to apply ethical theories and transfer gathered knowledge to concrete situations. The quality of the students' case study analysis increases if the expected output, like the presentation of the underlying ethical questions and solutions, is clearly specified. We could experience difficulties for students to empathize with situations in differing social, cultural and legal contexts. There is a need for case studies directly related to the students' actual or future (professional) environment.

3.6. Role-Play Discussions

In addition to real discussions we use also fictitious discussions, where the roles and the main statements are described on role cards. The aim of this method is to discuss a wide spectrum of arguments and to analyze ethical argumentation in discussions. In a discussion on violence in video games, for example, the following roles are defined: young person/player, father/mother, teacher, school administrator, producer of video games, politician. There are also roles as a moderator and as observers. The moderator leads the discussion and the observers note the most important arguments and present them after the discussion. In our experience students often find it difficult or artificial to play foreign roles. Nevertheless, the method is helpful to discuss also positions and argument lines that would otherwise not be expressed during the seminar. It depends on the group dynamics, whether this method is motivating the students. Based on our experience the number of role cards should not exceed five or six, so that the role play resembles more a real panel discussion.

3.7. Intermezzi

To enrich the seminar, we include different intermezzi. Examples are an interactive demonstration of an implementation of Weizenbaum's ELIZA [7], the presentation of video clips, the "recording" of a speech by Sokrates, and a song from "Die Dreigroschenoper" (The threepenny opera) by B. Brecht/K. Weill. These intermezzi are helpful as students are very concentrated during the whole seminar and can relax a bit, thus.

3.8. Closing the Seminar

Closing this intense seminar week is very important. We offered an open discussion with the participants to conclude the seminar. One year, some students expressed some confusion in this discussion. During the seminar they intensely discussed different ethical topics and problems. But the outside world remained unchanged. They felt a bit "lost".

Therefore, we now pay even more attention to the end of the seminar, allowing for a *smooth* transition back to school's everyday life. We developed a questionnaire covering the following topics in the specified sequence: reasons to choose the seminar, contents of the seminar, relevant problems and thoughts, positive situations/discussion points to remember, hopeful thoughts, beauty of life and thoughts to be shared with the co-participants. While the students are filling out the questionnaire we play some soft music. Only the papers with thoughts to be shared are collected by the teachers to compile a common concluding remark. It has been proven that the inner journey taken by filling out the questionnaire allows for students to successfully conclude the week and return to everyday life.

3.9. Online Support and Documentation

As an online support for the seminar we use BSCW (www.bscw.de), a tool for cooperative work in the internet. Before the start of the seminar we upload the list of topics, a bibliography, and a list of commented links. After the seminar the students publish a summary of their presentations. As a documentation of the seminar we hand out two readers: The first one is given out before the seminar takes place and contains basic texts in ethics, professional codes of ethics and the declaration of human rights. The second contains the summaries of presentations as well as the common concluding remarks (see 3.8). Students have the possibility to include individual notes before their personal reader is completed.

4. EVALUATION

Every seminar has been evaluated. Besides quality issues and the applied teaching methods, we also asked for reasons to choose the seminar, the personal basis for ethical decisions and interests in further events. Even groups who reacted negatively to the demand of preparing presentations by students judged them afterwards to be helpful and important. The organization of the seminar around students' presentations is very welcome. The time slots for discussions are important for the students. The case studies have also been assessed to be a relevant part of the seminar.

The evaluations have also exposed, that the seminar can sensitize students to ethical dilemmas and encourage them to think about ethics. This result was also obtained in the evaluation of a group of students, who chose the seminar because they were less interested in the other offered seminars. Therefore, we conclude, that the methods applied in our seminar have a positive impact on the participants.

5. CONCLUSION

It is important that ethics is included into the curricula at universities and university colleges. Often the ethical aspects are not included into engineering and informatics curricula. The one-week seminar offered at HSW Luzern allows students to integrate ethics into their studies and provides an ideal possibility to discuss such aspects with other interested students. All methods described in this paper have been successfully applied during the seminar.

REFERENCES

- [1] P. Brey, Disclosive Computer Ethics. In: *Computers and Society*, vol. 30, no. 4, pp. 10-16, Dec. 2000.
- [2] J. M. Basart Muñoz, Which Ethics Will Survive in Our Technological Society? In: *IEEE Technology and Society Magazine*, vol. 23, no.1, pp. 36-39, Spring 2004.
- [3] K. D. Stephan, Is Engineering Ethics Optional? In *IEEE Technology and Society Magazine*, vol. 20, no. 4, pp. 6-12, Winter 2001/02
- [4] L. Kohlberg, *The Psychology of Moral Development. The Nature and Validity of Moral Stages*. San Francisco: Harper & Row, 1984
- [5] F. Rötzer (Ed.), *Virtuelle Welten – reale Gewalt*, Hannover: Heise, 2003.
- [6] R. A. Spinello, *Case Studies in Information Technology Ethics*, 2nd ed., Upper Saddle River: Prentice Hall, 2003.
- [7] J. Weizenbaum, ELIZA – A Computer Program For the Study of Natural Language Communication Between Man and Machine, *Communications of the ACM*, vol. 9, no. 1, January 1966.