

A New Experience: The Course of Ethics in Engineering in the Department of Civil Engineering, University of Granada

Luisa María Gil-Martín · Enrique Hernández-Montes · Armando Segura-Naya

Received: 4 May 2009 / Accepted: 20 July 2009 / Published online: 11 August 2009
© Springer Science+Business Media B.V. 2009

Abstract A course in professional ethics for civil engineers was taught for the first time in Spain during the academic year 2007/08. In this paper a survey on the satisfaction and expectation of the course is presented. Surprisingly the students sought moral and ethical principles for their own ordinary lives as well as for their profession. Students were concerned about the law, but in their actions they were more concerned with their conscience, aware that it can be separate from the law.

Keywords Ethics education · Ethics and morality

Context

A course in professional ethics for civil engineers was taught for the first time in Spain during the academic year 2007/08. This is an elective course, so students can choose to take it based on their interest or curiosity. Elective courses can address any topic, and thus can be cultural or humanistic courses. The number of elective credits per academic year is very limited. The title of the course is “Engineering Ethics and Aesthetics”. The Spanish Society of Civil Engineers is following the

L. M. Gil-Martín · E. Hernández-Montes (✉)
School of Civil Engineering, University of Granada, Campus de Fuentenueva,
18072 Granada, Spain
e-mail: emontes@ugr.es

L. M. Gil-Martín
e-mail: mlgil@ugr.es

A. Segura-Naya
Department of Philosophy, University of Granada, Campus Universitario de Cartuja,
18072 Granada, Spain
e-mail: arsenal@universita.e.telefonica.net

development of this course with a view towards recommending its implementation at other civil engineering schools in the near future.

The course is divided into three theoretical themes and eight sub-themes:

1. Anthropology
 2. Conscience and morality
 3. Freedom
 4. The individual
5. Society
 6. Authority and the law
 7. The common good and individual good
 8. Social justice
9. Moral and ethical
 10. Personal responsibility and a professional code of ethics
 11. Man and society

The primary references for the course consist of eleven publications: Apel (1973); Giddens (1991, 2009), Habermas (1983, 1973a, b); Jonas (1988, 1994); Llano (1994); Rorty (1986) and Segura (1996).

The objective of the course is to increase the ethical and moral education of the students. Ethics education is far from an imposition of dogmas; we emphasize that ethics education should come from internal reflection and a free election. We consider happiness to be a state of conscience that depends on personal honesty.

Morality has to be pleasant and nice. Ethics may not be Kantian or grim, for if ethics is not pleasant and enjoyable it is not human. Kindness is attractive so an ethics design is crucial. We seek for the aesthetic that moral values are attractive.

Furthermore, actual case studies are analyzed in class. The case studies are written by recognized professional civil engineers. The cases deal with ethical issues arising during their professional practice.

Society needs honesty, and honest civil engineers. One of the many case studies we study is the case of the largest engineering firms in the United States, where the anticorruption laws are very stringent. Whether this influenced this firm to locate the headquarters of its Civil Engineering division overseas is investigated in this course.

Students have to realize that morality enhances the quality of engineering. The technical society is interested in honest professional conduct.

Revision of the Content of the Course

Professors involved in this course (authors of this paper) have considered changing its syllabus. After a discussion about the progress of the course, a survey was conducted and 35 students participated in the discussion and the subsequent survey. The survey sought to measure not only the satisfaction of the students after two years of the course, but also to challenge the content: theoretical and case studies.

Percentage of professional versus ordinary life case studies

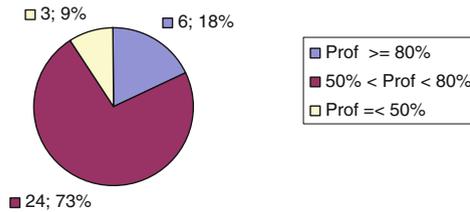


Fig. 1 Type of case studies desired by students

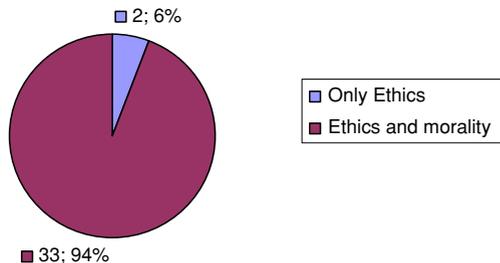
Case studies considered were related with professional problems, but in the current academic year 2008/09 some cases were introduced with a new point of view. The new cases studies contain different problems such as family reconciliation, personal maturity, motivation and moral values. The first question of the survey focused on the types of cases studies that the students preferred, with the result that students wish that 40% of cases should be related to questions of morality and ethics in ordinary life and 60% of cases related to professional issues. Figure 1 shows the result of the first question of the survey. The answers are grouped in three subsets: (1) the number of students who wanted professional cases to be in excess of 80% of all cases, (2) those who wanted professional case studies to be between 50 and 80% of the total, and finally (3) those who wanted more private case studies than professional case studies. Only 6 students (18%) wanted the number of professionals constitute more than 80% of the cases studied in class, whereas 24 students (73%) wanted the number of professional case studies to constitute between 50 and 80% of the total. Finally, only 3 students (9%) wanted the professional cases studies to be less than half of all cases.

Ethics Versus Morality

Ethics and aesthetics raise issues within a relationship: law, behavior, education, empathy and so on. The students in the fifth year in the Civil Engineer Master's degree program at the University of Granada, through case studies, have repeatedly suggested the need to base ethics on something more solid, and they continuously

Fig. 2 Treatment of case studies—ethics versus ethics and morality

Ethics versus Ethics and morality



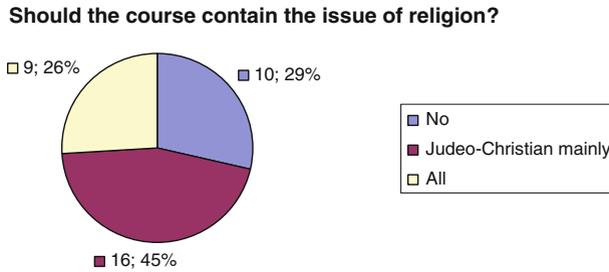


Fig. 3 Religion in ethics

ask to include aspects of morality and conscience. The survey had a section related to the choice of treating the case studies from an ethical or a moral point of view. Only 6% (2 of 35) desired to treat only the ethical aspect of the case studies. Most wished to address the problems from the standpoint of conscience and the concept of good and evil (Fig. 2).

Religion as the Base of Morality

In the “Person of the Year” interview in *Time* magazine (Huey et al. 2007) the interviewer asked President Putin “What role does faith play in your leadership?”, and President Putin answered: “First and foremost, we should be governed by common sense. But common sense should be based on moral principles first. And it is not possible today to have morality separated from religious values”. This is a small part of a long interview with Vladimir Putin, which is discussed in the course.

The most controversial issue is whether the course should include issues of religion, which was not within the initial scope of the course. All the students agreed that morality was related to religion. Most students expressed the desire that the course should contain some topics of religion. They asked for more information in the course on the Judeo-Christian tradition, but also wanted notions of other religions. Ten out of 35 were opposed to addressing issues of religion in class; the remainder (71%) suggested adding issues of religion. Sixteen out of 35 (45%) wanted issues related to the Judeo-Christian tradition included in the course (Fig. 3).

Most of the students felt that the course had a transcendent value and utility beyond the purely professional. Many may have recommended the course to their colleagues, since 65 students took the course in the academic year 2007–2008 and 85 students in the academic year 2008–2009.

Conclusions

The course “Engineering Ethics and Aesthetics” had outcomes that went beyond professional aspects; with students seeking to include moral and ethical principles in their own ordinary lives as well as in their professional development.

Students were concerned about the law, but in their actions they were more concerned with their conscience, aware that it is distinct from the law.

The students also sought to have general knowledge about topics related to religious and moral conscience.

Acknowledgments We extend our sincere appreciation to Professor Mark Aschheim of Santa Clara University for his stimulating discussions during the preparation of this paper.

References

- Apel, K. O. (1973). *Transformation der Philosophie*. Frankfurt am Main: Suhrkamp Verlag.
- Giddens, A. (1991). *Modernity and self-identity*. Cambridge: Polity press and Basic an Blackwell.
- Giddens, A. (2009). *The politics of climate change*. Cambridge: Polity press.
- Habermas, J. (1973a). *Hermeneutik*. Frankfurt am Main: Suhrkamp Verlag.
- Habermas, J. (1973b). *Das Apriori der Kommunikationsgemeinschaft*. Frankfurt am Main: Suhrkamp Verlag.
- Habermas, J. (1983). *Moralbewusstsein und kommunikatives Handeln*. Frankfurt am Main: Suhrkamp Verlag.
- Huey, J., Stengel, R., Ignatius, A., & Zarakovich, Y. (2007). The time interview. Putin opens a window on his life. *Time*. 31 Dec 2007—7 Jan 2008.
- Jonas, H. (1988). *Das Prinzip, Verantwortung*. Frankfurt am Main: Insel-Verlag.
- Jonas, H. (1994). *Das Prinzip, leben*. Frankfurt und Leipzig: Insel-Verlag.
- Llano, A. (1999). *Humanismo cívico*. Barcelona: Ariel.
- Rorty, R. (1986). *Objectivity, relativism ant truth. Philosophical papers* (Vol. 1). Cambridge: Cambridge University press.
- Segura, A. (1996). *El pensamiento de Heidegger en el contexto del pensamiento débil*. Granada: Editorial Universitaria.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.