

DISCUSSION OF ENVIRONMENTAL NEWS IN THE FRAMEWORK OF AN ECODESIGN COURSE

Joaquim LLOVERAS

Technical University of Catalonia (UPC)

ABSTRACT

The main objective of the Ecodesign subject is to provide students with theoretical knowledge and practical skills in designing new engineering products in accordance with ecological criteria [1].

This article describes the experience of devoting class time of an ecodesign course to student oral presentations and discussion of environmental news appearing in the daily press.

It was thought that the above activities could provide a good excuse to debate the state of the art with the aim of increasing student motivation to design more ecological products, which contribute to the reduction in environmental impacts.

Although the discussions after the oral presentations were brief, the anonymous student survey reveals the success of this experience.

Keywords: Environmental news, daily press, student exercise, Ecodesign motivation

1 INTRODUCTION

The primary objective of the Ecodesign course is to homogenize and improve students' knowledge of environmental impacts in order to increase their motivation to design new more ecological products.

In previous years, at the beginning of the course several class sessions were devoted to the above. However, in the 2007-08 course, the methodology was changed and students prepared and individually presented some environmental impacts based on selected news taken from the daily press.

In the past few years, the serious press has provided plenty of information about environmental impacts which may well serve as a point of departure to analyze and debate such impacts.

Ecodesign is a 2.5 ECTS free elective course taught at the Technical University of Catalonia (UPC). Undergraduate students can take it during the autumn semester. In this 2007-08 course, the 2-hour classes were structured as follows: during the first 20-30 minutes the professor gave a summary of subject themes. Students made oral presentations of news selected from newspapers in the next 30-45 minutes, and then a discussion followed. Remaining class time was spent on teamwork. At the end of the course, groups gave an oral presentation about their work on more ecological redesigns of industrial products and answered pertinent questions.

The student survey was given at the end of the course to gather opinions about their oral presentations in class. Another survey about their overall impression of the course was also conducted, but only the former is described in this paper.

2 METHODOLOGY

From April to September 2007, 47 press articles on several environmental impacts were selected from national newspapers. Some were opinion articles and most of them provided data of future trends and technological solutions for environmental impacts; only a few dealt with ecodesigned industrial products.

Students were asked to choose one of these articles although with a narrow margin of election. The choices were announced in class and students were given between one and two weeks to prepare their oral presentations.

Three articles were presented per class session. Students had to describe the news with slides, provide new data and then offer their opinion on the matter. Next a brief debate was opened. These presentations counted towards their final mark. Figure 1 shows some examples of selected news headlines.



Figure 1 “Collage” of some headlines used in the student presentations and discussions [2-10].

During the discussion students expressed their opinion when exaggerated remarks were detected in the article. Moreover, links between some news were established.

3 RESULTS

21 students registered in the above course, 17 of whom attended classes regularly and made the presentation. All students presented their work of analysis of the news, although only a few participated actively in the debates. The professor always commented on the news.

The survey was answered by 16 students.

3.1 Survey (first part)

The survey started as follows: This course is based on student analysis of environmental news that appeared in newspapers. The professor distributed newspaper clippings of news on environmental impacts or techniques for reducing them that appeared in 2007. Students chose one item although with a narrow margin of election. They were given one or two weeks to prepare an oral presentation, which they delivered to the class with the aid of slides. Students described and commented on the news, and commented and, in some cases, they explained further about the subject. Finally, a debate was open. Class sessions usually started with an introduction by the professor. Next three students gave their oral presentation. This first part of the class lasted about an hour. The remaining class time was spent on teamwork.

Your opinion on this exercise is requested. Thank you for your cooperation.

Choose between: 1= strong disagreement, and 5 = strong agreement.

The following table shows the sixteen items included in the survey and the results. The last column (A) corresponds to the average rating for each item.

Table 1 Items and number of answers. Column A: Average rating.

		1	2	3	4	5	A
1	The introductory part of this survey describes the class sessions accurately. *	0	0	1	8	6	4.3
2	I found the subject I worked on interesting.	0	1	6	5	4	3.8
3	The choice of subjects was not wide enough.	1	0	7	6	2	3.5
4	I explained further about the content of the news.	1	2	3	9	1	3.4
5	I learned something from the news.	0	0	5	7	4	3.9
6	I learned something while preparing the oral preparation.	0	1	3	6	6	4
7	I am satisfied with the presentation I gave.	0	0	4	11	1	3.8
8	I devoted much time to preparing the presentation.	0	7	5	4	0	2.8
9	I found the discussion interesting.	2	1	4	8	1	3.3
10	I learned something from the discussion.	2	3	5	5	1	3
11	I found the other presentations interesting.	0	2	1	7	6	4.1
12	I found most discussions interesting. *	0	0	4	2	9	4.3
13	I consider this type of exercise interesting.	0	0	2	3	11	4.6
14	I think that this type of exercise helps me gain knowledge.	0	1	1	5	9	4.4
15	I think that this type of exercise can encourage students to design more ecological products (Ecodesign).	0	2	4	4	6	3.9
16	I think you that this type of exercise should be included in subsequent editions of the Ecodesign course.	0	0	3	3	10	4.4

* Only 15 answers out of 16.

The first eleven items are concerned with the student's individual experience while the following five are general opinions.

The average rating for the general items (12 to 16) ranges from 4 to 4.5 out of 5, which indicates students regarded the proposed exercise as very interesting and believed that they learned from it and became more aware about the need to design more ecological products. In addition, they recommend repeating the experience in future editions of the course.

3.2 Survey (second part)

The survey has a second part: Any other comments (about previous statements, ways of improving this type of exercise, your personal experience, the role of the press in the exercise...)

Below are some students' remarks. These opinions are not necessarily in agreement with the professor's own opinion; some are even contradictory.

3.2.1 About the news:

"I did not find this article particularly interesting."

"The only thing that I would change is that I would let the student choose the news."

"It is best if the student selects the news and asks the professor whether there are other items on the same subject."

"The news should be the departure point from which the student prepares a subject."

"Information about a subject could be gathered and a debate could be open with the professor acting as the moderator. Two or three debates should be done in depth during the course."

"These articles should be read by more students."

3.2.2 About workload:

"The workload is acceptable."

"Preparing the exercise (content and presentation) takes too long. The news is not always appealing for the other students."

3.2.3 About the discussion:

"Students should participate more in the discussion."

"The discussions have made me aware of the importance of eco-design."

"I think that the discussions have been a good way of learning new things and making us aware of the environmental concern."

"In addition, I believe that the discussion is a very effective method from an educational point of view."

"A suggestion: to deal with similar subjects during the same class session to make the discussions more interesting."

"Student participation has been poor."

"It is necessary to encourage student participation."

"The discussions have made the classes more dynamic."

3.2.4 About the press:

"The news clippings are very useful since when including personal opinions, they force the student to look further into the matter to be able to give his own opinion."

"The news media are biased, alarmist and little rigorous."

"You cannot trust the press since the information provided by the media is often subjective and untrustworthy."

“It is essential to select articles from serious press.”

3.2.5 General considerations:

“The presentations are a way of getting students more involved in the course.”

“It is a good exercise one learns not only by preparing the presentation on his/her own news item, but also by listening to the others’ presentations.”

“In my opinion, the course is very interesting and useful to raise students’ awareness about the importance of bearing in mind the environmental impact when designing products.”

“This type of exercise is a very useful way of introducing certain issues in the course.”

“The lessons are easy, varied and pleasant.”

“Class attendance is encouraged.”

“Awareness of the global environmental concern is raised, and therefore more effort is put into promoting the eco-design of products.”

“It has been a very interesting experience.”

4 2008-2009 COURSE

This first experience of student presentations of environmental news taken from the daily press followed by a debate took place within the framework of the 2007-08 Ecodesign course taught at UPC. The intention is to repeat this experience in the 2008-09 course [11] after improvements are made.

At the beginning of the 2008-09 course, a variety of environmental news which appeared in newspapers and specialized journals during 2007 and 2008 can be provided to students by the teacher. Every student will select an item of news to prepare and present to the class. The news will be different from those presented in the previous course. A schedule of presentations will be set. The amount of time devoted to presentations will be only the first half of the course, but the subsequent debates will last longer than in previous years. Students will be asked to present the news and complete their presentations with other sources of information in a limited time period. Following this, the debate will be opened.

Poor class participation in the discussions was the weak point of this first experience. The reasons for this might be the teacher’s extensive contribution as well as a tacit understanding among students to avoid giving classmates a hard time by asking questions, etc. To encourage free discussion in class, the teacher could be brief in his comments and prepare questions about the subject of discussion.

5 CONCLUSIONS

Doubts about this first experience disappeared with the anonymous 16-item survey given to students, who rated this new way of dealing with environmental issues positively, especially items 13 and 16, which obtained an average rating of 4.6 and 4.4, respectively.

The experience has been positive, although student active participation in the discussions can be improved.

The comments in the second part of the survey reveal a good degree of student maturity. In addition, some interesting proposals for subsequent editions of the course were put forward.

The press reports were adequate for this educational level.

Altogether this experience has proved very useful to provide students with some insight into environmental impact issues and, indirectly, increase motivation to design more ecological products.

REFERENCES

- [1] Lloveras, J. (2007), Ecodesign: a Subject for Engineering Design Students at UPC. *Proceedings of the 14th CIRP International Conference on Life Cycle Engineering (Ic 2007)*, Waseda University, Tokyo, Japan, June 11th-13th, 2007. Advances in Life Cycle Engineering for Sustainable Manufacturing Businesses. Ed: Takata, S. and Umeda, Y., Ed. Springer-Verlag London Limited, pp. 101-106. CD-ROM: A3-5.
- [2] Oliveras, E. (2007), El 20% de l'energia de la UE serà renovable. (20% of the energy of the UE will be renewable). *El Periódico*, Dissabte, 10 de Març. Internacional, p. 10.
- [3] Ramón, C. (2007), Llegan los urinarios sin agua. (The urinary without water arrive). *La Vanguardia*, Domingo, 13 de Mayo. Dinero, p. 4.
- [4] Amiguet, L. (2007), interview to Norman Myers. La gasolina debería ser más cara. (The gasoline would have to be more expensive). *La Vanguardia*, La Contra, Lunes 28 de Mayo, p. 96
- [5] Casanova, E. (2007), El Apocalipsis en tiempo real. (The Apocalypse in real time). *La Vanguardia*, Sociedad, Lunes, 25 de Junio, p. 32.
- [6] Cerrillo, A. (2007), Los coches deberán etiquetar el CO₂ que emitan. (The cars will have to label CO₂ that they emit). *La Vanguardia*, Sociedad, Jueves, 28 de Junio, p. 36.
- [7] Amiguet, L., (2007), Interview to Denis Meadows. Mi predicción se ha cumplido. (My prediction has been fulfilled). *La Vanguardia*, La Contra, Domingo, 8 de Julio, Revista, p. 16.
- [8] Cerrillo, A. (2007), El Gobierno incentivará los parques eólicos marinos para combatir el cambio climático. (The Government will stimulate the marine Aeolian parks to fight the climatic change). *La Vanguardia*, Sociedad, Viernes, 20 de Julio, p. 29.
- [9] Marzo, M. (2007), La dura realidad sobre la energía. (The hard reality on the energy). *La Vanguardia*, Opinión, Viernes, 10 de Agosto, p. 17.
- [10] Cerrillo, A. (2007), La capa de ozono, en vías de recuperación. (The ozone layer, on the way to recovery). *La Vanguardia*, Sociedad, Domingo, 16 de Septiembre, p. 41.
- [11] <http://www.upc.edu/web/sga/ales/index-ale.php> (July - November).

Acknowledgements

The author gratefully acknowledges the participation of the all students of Ecodesign UPC course 2007-08 in this exercise.

Joaquim LLOVERAS

Technical University of Catalonia (UPC)

Dpt. Projects. School of Industrial Engineering
of Barcelona (ETSEIB)

Av. Diagonal, 647. 08028 Barcelona (Spain)

j.lloveras@upc.edu

Tel. +34 934016642; Fax +34 934016646