

## ENVIRONMENTAL SOCIOLOGY IN HIGHER EDUCATION: ENGAGING STUDENTS IN ACTIVE LEARNING PROCESSES

*Evangelos I. Manolas*

### Abstract

In order to explore the reciprocal relationship between humans and their environment, environmental sociology instructors in institutions of higher education usually want their students to be able to: become familiar with the main sociological perspectives and concepts in environmental sociology, have a greater understanding of environmental problems, better appreciate how individuals, social organizations and social movements interact with the environment and impacts thereof, be able to discuss current literature in the field of environmental sociology and further develop their writing ability, their capacity for critical thinking, for research and analysis. In order to support and promote the above objectives it is important to use active learning approaches as opposed to passive ones. To this purpose, this paper outlines a number of learning techniques such as concept assignments, field activity report, jigsaw, position papers, questionnaire analysis, reciprocal peer tutoring, scripted cooperative dyads and structured controversy. In each case reference is made to specific examples from the field of environmental sociology.

### *Introduction*

Environmental issues, problems and struggles are central to human life in the 21<sup>st</sup> century. Negative trends of environmental change have added more urgency to discussions about the veracity and consequences of such observations. Environmental sociology can be viewed as a response to the dilemmas created by such observations and, in particular, the construction and pursuit of sustainability.

Traditionally, the term sustainability is understood to refer to ecological crisis phenomena, like climate change, deforestation, soil degradation or loss of biodiversity. It, nevertheless, describes a field of investigation that is based on a society-oriented definition of problems. In this sense sustainability addresses the question of how societies can shape their modes of change in such a way as to ensure the preconditions of development for future generations. From this point of view, sustainability refers to the viability of socially shaped relationships between society and nature over long periods of time. Thus, environmental sustainability turns out to be closely linked to supposedly “internal” problems of social structure, such as social justice, gender equality and political participation (Becker, Jahn and Stiehs 2007: 3-4).

The interaction, therefore, between humans and their environment is at the heart of the study of environmental sociology. In order to explore this reciprocal relationship, environmental sociology instructors in institutions of higher education usually want their students to be able to: 1) become familiar with the main sociological perspectives and concepts in environmental sociology, 2) have a greater understanding of environmental problems, 3) better appreciate how individuals, social organizations and social movements interact with the environment and impacts thereof, 4) be able to discuss current literature in the field of environmental sociology and 5) further develop their writing ability, their capacity for critical thinking, for research and analysis.

This paper aims to support and promote the above goals by suggesting and discussing active learning techniques in which students are not simply recipients of information, but they are receiving *and* participating *and* doing (McKeachie 2001: 2; Deeter 2003: 1). The active learning techniques which follow are listed and discussed in alphabetical order and not in order of importance.

### *2. Concept assignments*

Concept assignments are short writing assignments (approx. 1-2 pages double-spaced) in which students are asked to reflect on a concept chosen from a list provided by the teacher (Bartley 2004: 2-3). All the concepts provided in the list should be used in the course readings.

For each assignment, students are asked to complete two tasks:

1. Explain what the concept means and how it is used by the author of the reading. This requires much more than just providing a definition. Show that they understand the context in which the author is using the concept. The key is to ask themselves the following question: What is the larger argument the author is trying to make, and how does this concept fit into it? If they have trouble answering this question, they should be advised to go back and do the reading again as it might be extremely difficult to understand the concept without understanding the assigned reading as a whole.
2. Reflect on the concept in a way that provides evidence of careful, critical thought, guided by a sociological perspective. To do this, they might discuss observations from personal experiences, raise critical questions about the reading, provide additional examples of the concept, or extend a point that struck them as particularly interesting.

### *3. Field activity report*

Educational reformer and philosopher John Dewey once wrote that “education is life” (1981: 450), that what students learn and the way they learn it should be rooted in real life experiences. According to Dewey, no approach to teaching makes the education-life connection more clear than experiential education. Field activities may best be seen as an example of *short-term experiential education*. Field activities offer the sort of enriching experiences that Dewey recognized as so central to successful educational endeavours

because they are *experiences* lived real life events that become ways of knowing. As experiential education, University-level field activities are opportunities for students to actively engage in making connections between daily life, on one hand, and the classroom and textual content of courses, on the other (Scarce 1997: 219).

In environmental sociology courses possible field activities for students might include the following: visiting an animal shelter to study how animals are treated; going to a shopping mall to observe consumption behaviours and interview people to better understand why they consume things; participating in a beach cleanup to experience environmental action on the ground and to interview people about why they seem to care about the seashore environment; having an appointment with one or more government agencies to explore their views and activities to implement sustainable development; visiting a housing estate to observe and study waste separation and recycling programs; visiting the offices of one or more environmental organizations (e.g., Greenpeace, Green Power, WWF, etc.) to learn about their activities, and join or observe one of their demonstrations or civic actions; doing an environmental audit of their University; etc.

In their field activity report students should summarize what they did and what they learned about environment and society as a result of the activity, as well as make explicit connections between the activity and the relevant concepts and themes arising from the assigned reading or / and the classroom discussions.

#### *4. Jigsaw method*

Aronson (1978) developed the “Jigsaw” method, where students are divided into heterogeneous groups, each of which is given the same chapter, article, or book to read. Individual members within the group are responsible for becoming an expert on some section of the reading or concept within it. Students begin by meeting in groups with others who are responsible for the same section or concept. While in these groups, the students share information and develop a teaching plan. They then assemble in their original group where all members teach their area of expertise to the rest of the group. Students are tested on the material, and all receive an individual grade for the test. For example all students might be given an article or book chapter on sociological theories on human-environment interactions, e.g. Buttell and Humphrey (2002), Ogunbameru (2005: 99-104) or Hannigan (2006). Individual students would then be expected to become an expert on one of the theories, and teach it to the rest of their group.

Slavin (1980: 82-135) adapted Jigsaw to form “Jigsaw II”, which imitates Jigsaw in all ways except grading or rewards. In Jigsaw II, students are tested on the material and receive an individual grade on their tests. But unlike Jigsaw, the instructor also gives a group score based on students’ actual test scores and improvement from previous tests. Thus, even students who are not doing as well relative to others in the group can contribute substantially to the group by improving their own performance. This adds some pressure on group members to be certain that all those in the group thoroughly understand the material.

### 5. *Position papers*

In position papers (Latta 2007: 4) students are asked to write a critical comparative analysis of two articles, at least one of which is an article from the course kit. If they choose to bring the second of the two articles from outside the course kit, the outside article must first be approved by the course instructor.

The purpose of the position paper is to encourage students to engage directly with selected course articles, offering them opportunities to more deeply explore issues and ideas that they find interesting. It also gives the instructor a chance to gauge the students' analytical skills and give constructive feedback. Students are encouraged to express their own reasoned opinions about the articles they examine – this is, after all, a “position paper.” There is no strict formula for doing critical comparative analysis, though certain components should be present. These components include the following (not necessarily in order):

- An explanation of the main arguments found in each article, including consideration of both theoretical and empirical (when present) aspects.
- An examination of the ways in which the two different analyses may be considered opposing and/or complimentary. Even papers on very different topics can be compared and contrasted, though students may have to dig deeper or ask less obvious questions if the two pieces do not share obvious common ground.
- An argument as to why each article is interesting (or not), along with an effort to relate the specific issues of the reading to the course material more generally.
- A judgement about the relevance/usefulness/validity of each author's analysis and conclusions.
- A suggestion about further questions with which the articles leave us.

### 6. *Questionnaire analysis*

A good way to introduce a new topic – or to check on learning halfway through one – is the true or false questionnaire. This technique is especially useful when participants are likely to have major misconceptions about the topic(s). Some examples of such misconceptions: “Since they have a far larger population than rich countries, poor countries inevitably contribute more to the world's environmental pollution”, “Environmental problems have the same effect on everyone”, “The history of human society is one of progress, there is a solution to every problem, and progress need never cease”.

The teacher prepares a list of statements related to common misconceptions about the selected topic(s), half of which are true and the other half false. Copies of the list are distributed to the students each of whom is asked to decide if each statement is true or false. When they have finished the task, the teacher reads the first statement aloud and asks participants who think that the first statement is true to raise their hands. The teacher then explains why the statement is true or false and provides relevant background information. The procedure is repeated with each statement (Interactive Lectures: Summaries of 36

Formats 2003: 16-17). This exercise helps faculty find out what students know and do not know about a subject(s) and helps generate a list of questions and of issues demanding further study.

### *7. Reciprocal peer tutoring*

Reciprocal peer tutoring (RPT) is designed to promote mutual tutoring. The RPT procedure requires participants to assume both tutor and student roles. Students are randomly paired with a partner throughout a semester course of study. Before every class unit exam, each partner creates a 10-question multiple-choice test based on assigned readings and lecture material for that unit. They also provide a 3 x 5 index card for each question. The card contains the correct answer to the question and a reference to the section of the book or lecture where the information was presented. For the tutoring sessions, students administer their written exams to one another under test-like conditions. After completing the exam, subjects switch tests and score their partner's exam. Then they alternately provide one another with explanations for questions answered incorrectly. Students turn in their corrected tests and answer cards before every course unit exam (Fantuzzo, Dimeff and Fox 1989: 133-135; Fantuzzo, Riggio, Connelly and Dimeff 1989: 173-177).

### *8. Scripted cooperative dyads*

This highly structured cooperative technique requires pair partners to exchange multiple oral summaries of 1 to 2 pages of text material. Partners are trained by example and practice to elaborate on each other's summaries. With regard to metacognitive abilities, partners are taught to detect and correct errors and omissions and to judge the importance of the ideas presented. This involves creating images, making analogies, and personalizing the information to make it more understandable and memorable (O'Donnell and Danserau 1992: 120-141). Typical directions would be the following:

1. Flip a coin to determine who will be partner A or B.
2. Both partners read Passage #1.
3. When both are finished, put the passage out of sight.
4. Partner A orally summarizes Passage #1.
5. Partner B detects and corrects any errors in Partner A's summary (the metacognition step).
6. Both partners work together to develop analogies, images etc., to help make the summarized information memorable (the elaboration step).
7. Both partners read Passage #2.
8. Repeat steps 4-6 with partners reversing roles.

### 9. Structured controversy

Structured controversy, also known as academic controversy, aims to improve critical thinking skills by engaging students in academic conflicts (Johnson and Johnson 1988: 58-64). To begin, the instructor gives students a controversial topic, such as, “Can capitalism be reshaped to meet the demands of sustainability?” or “In the last years, a vigorous debate has opened up in the literature between two visions of social-environmental relations: the ‘treadmill of production’ thesis and ‘ecological modernization’ theory. Which side seems more empirically accurate, more theoretically cogent, and more practically relevant to the problems of social-environmental relations? The topic should have at least two well documented positions. Students are placed into groups of four, with each pair within the group being assigned to one side of the issue. The pairs research the issue, and prepare to advocate for their position within the group. Following the presentation of each pair’s position, the foursome engage in a discussion where they refute the other side and rebut attacks. They then reverse perspectives and defend the opposing position. Finally, the group must synthesize all of the gathered material and reach a consensus on a position that they determine to be the best reasoned one. They can then write a report or / and present their position to the rest of the class.

### 10. Conclusion

This paper discussed eight practices instructors can use in order to support and promote the involvement of students in active learning processes regarding the teaching of environmental sociology in institutions of higher education: concept assignments, field activity report, jigsaw, position papers, questionnaire analysis, reciprocal peer tutoring, scripted cooperative dyads and structured controversy. Each strategy was illustrated by concrete examples from the field of environmental sociology. Planning and implementing active learning takes time and energy. But the rewards, both for instructors and students are great. Instructors switch from the role of disseminator to that of facilitator of information and, in this way, renew their commitment to the highest challenges of their calling. And students are given opportunities to recognize and accept their responsibility for lifelong learning and continued personal and professional development.

### References

- Aronson, E. 1978. *The jigsaw classroom*. Beverly Hills, CA: Sage.
- Bartley, T. 2004. *Sociology 101 – Social Problems and Policies: Sociology of Environment*. <http://www.indiana.edu/~tbsoc/s101f04syllabus.doc> (accessed May 24, 2007).
- Becker, E., Jahn, T. and Stiess, I. 2007. *Exploring Uncommon Ground: Sustainability and the Social Sciences*. <http://www.isoe.de/ftp/ZedBooks.pdf> (accessed November 24, 2007).
- Buttel, F. H. and Humphrey, C. R. 2002. Sociological Theory and the Natural Environment. In: *Handbook of Environmental Sociology*. Edited by Riley E. Dunlap and William Michelson. Westport: Greenwood Press.
- Deeter, L. 2003. Incorporating Student Centered Learning Techniques into an Introductory Plant Identification Course. In: *NACTA Journal* 47 (2): 47-52.

- Dewey, J. 1981. *The Philosophy of John Dewey*. Edited by John J. McDermott. Chicago, IL: University of Chicago Press.
- Fantuzzo, J. W., Dimeff, L. A., and Fox, S. L. 1989. Reciprocal peer tutoring: A multimodal assessment of effectiveness with college students. In: *Teaching of Psychology* 16 (3): 133-135.
- Fantuzzo, J. W., Riggio, R. E., Connelly, S. and Dimeff, L. A. 1989. Effects of reciprocal peer tutoring on academic achievement and psychological adjustment: A component analysis. In: *Journal of Educational Psychology* 81 (2): 173-177.
- Hannigan, J. 2006. *Environmental Sociology*. Second Edition. London: Routledge.
- Interactive Lectures: Summaries of 36 Formats. 2003. <http://www.thiagi.com/interactive-lectures.html> (accessed March 22, 2004).
- Johnson, D. W. and Johnson, R. T. 1988. Critical thinking through structured controversy. In: *Educational Leadership* 46: 58-64.
- Latta, A. 2007. Political Science 319 Selected Topics in Political Theory: Contemporary Environmental Political Thought. <http://www.cddc.vt.edu/ept/syll/POL319Syllabus.pdf> (accessed May 26, 2007).
- McKeachie, W. J. 2001. *Active Learning*. [http://hydro4.sci.fau.edu/~rjordan/active\\_learning.htm](http://hydro4.sci.fau.edu/~rjordan/active_learning.htm) (accessed August 8, 2001).
- O'Donnel, A. M., and Dansereau, D. F. 1992. Scripted cooperation in student dyads: A method for analyzing and enhancing academic learning and performance. In: *Interaction in cooperative groups: The theoretical anatomy of group learning*. Edited by R. Hertz-Lazarowitz and N. Miller. London: Cambridge University Press.
- Ogunbameru, O. A. 2005. Human-Environment Interactions: The Sociological Perspectives. In: *Journal of Social Sciences* 10 (2): 99-104.
- Scarce, R. 1997. Field Trips as Short-Term Experiential Education. In: *Teaching Sociology* 25: 219-226.
- Slavin, R. E. 1980. Student team learning: A manual for teachers. In: *Cooperation in Education*. Edited by S. Sharan, P. Hare, C. D. Webb, and R. Hertz-Lazarowitz. Provo, UT: Brigham Young University Press.

*Contact:*

Evangelos I. Manolas  
 Assistant Professor  
 Department of Forestry and Management of the  
 Environment & Natural Resources Democritus University of Thrace  
 193, Pantazidou Street, 68 200 Orestiada, GREECE  
 E-mail: emanolas@fmenr.duth.gr  
 Telephone: +30 2552 0 41157