

Conference Strand: The “Open Mic” Strand

Titles and Presenters:

Collaborative Model For Teaching Environmental Public Policy
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ABSTRACT

Citizen understanding of governmental legislation requires both an appreciation of the legislative process and the means through which our elected representatives strive to weigh varying perspectives. This is particularly true for federal environmental legislation where divergent interests contribute to conflicting views on the merits of proposed legislation. Using grant funds from the Associated Colleges of the South; three interested parties (Rhodes College, Lausanne Collegiate High School and the office of Senator Lamar Alexander) collaborated to create a novel secondary education course that emphasizes how varying environmental perspectives are evaluated and weighed when formulating opinions on the value of federal legislation. Our student facilitated learning experience was designed around house legislation HR3472. The legislation proposes the creation of a federal task force to expand GMO product markets both domestically and internationally. The evaluation of this legislation required that students understand the relationship of biotechnology to basic plant biology and previously employed techniques for modifying plants. The experience also challenged students to grapple with the advantages afforded society by GMO products relative to the perceived or real concerns expressed by those wary of GMO products. Assessment of this project demonstrated increased understanding of both scientific and policy issues surrounding this bill.

INTRODUCTION

Many secondary education programs in the United States offer courses that enhance student understanding of environmental issues through an exploration of the underlying scientific principles (courses such as environmental science) or courses which examine how legislative processes work to influence the formulation of governmental policy (government or policy courses). However, students enrolled in only one of these courses rarely have the opportunity to gain a full appreciation of the perspectives of divergent stakeholders who all play an important role in shaping federal environmental policy through the legislative process (Robinson and Crowther 2001). Further, although these courses provide a good introduction to a variety of environmental issues they do not allow students to delve deeply into any one particular question of interest. These types of student experiences may leave students with a limited appreciation for different perspectives and result in a somewhat narrow understanding of environmental questions (Lord 2001). In this note, we report on a course design which challenges students to grasp a deeper understanding of the environmental legislative process and encourages long term problem-based self-learning in students.

COURSE DESCRIPTION

Origin and Support for Environmental Public Policy Course:

The course described grew from collaboration between a local area high school (Lausanne Collegiate School) and a small liberal arts college (Rhodes College). This pilot program was supported through an Associated Colleges of the South Campus and

Community Partnership grant and the office of Senator Lamar Alexander (TN).

Additional support for the program came through presentations by community experts, high school teachers, and the offices of local area legislators. The involvement of all of these groups insured that students had a greater appreciation of the impact of this legislation on their own community and also exposed students to a variety of views regarding the legislation investigated.

Overall Design of the Course:

The overall course design is shown in Table-1. Students were introduced to the course and given background information on the history of the environmental movement and how it has influenced the development of current stakeholders in federal environmental policy formulation. Students then reviewed a variety of pending

Table-1 The Overall Course Design for the Environmental Public Policy Course. Although this course utilized a problem based learning approach, the course was designed around a series of milestones which focused student efforts. Below is a timeline showing approximate time periods required to accomplish each milestone. LCS indicates Lausanne Collegiate High School.

<u>Course Milestones</u>	<u>Timeline</u>
-Introduction to Course	January
-History of Environmental Movement	January
-Selection of Legislative Bill	Late January
-Student Research/Expert Testimony on Bill	January-March
-Presentation Development	March
-Pre-Presentation Survey of LCS Students	March
-Presentation of Findings to LCS Student Body	Early April
-Post-Presentation Surveys of LCS Students	April
-Presentation to Legislative Staffers	Late April
-Analysis of LCS Student Responses to Surveys	May
-Student Participant Evaluation	May

legislation identified through the Thomas.loc.gov website and selected House Bill 3472 – The Establishment of a Federal Interagency Task Force on Agricultural Biotechnology. This was an opportune choice of topics since previous studies had shown the subject of GMO foods was useful in developing critical analysis skills (Flores and Tobin 2003). Students then engaged in researching the bill using a variety of resources: primary and secondary literature, documentaries, and websites. They also identified and invited local community experts with varying views on HR 3472 to speak to the class. Students then constructed survey tools to assess LCS student opinions and content knowledge regarding central issues related to the bill and administered this survey to the LCS student population. Following numerous class discussions, a majority viewpoint on the legislation was formulated and students worked to prepare a 50 minute class power point presentation on this bill. The class made this presentation first to the LCS student body and then later to a collection of local staff from Senator Alexander’s office and other local federal legislative office staffers. Students completed the course by administering a post presentation survey to the LCS student body and analyzing this survey to determine if the opinions and content knowledge of the LCS student body had been influenced by their presentation. Finally student participants in the course were surveyed to determine how the course influenced their own views on environmental issues, the legislative process, and the importance of legislative staff in environmental policy formulation.

PROJECT OUTCOMES

Impact of Course on Students:

Based on student class surveys (Table-2) student interest in environmental issues and the legislative process was increased. Further, the involvement of community groups in the course enhanced student understanding of both environmental issues and the role of congressional legislative staffers in the formulation of environmental policies (Table-2). The utilization of a problem-based approach with a focus on a final project outcome (presentations to LCS and congressional staffers) clearly enhanced student skills associated with a wide variety of resource materials and the synthesis of these materials into an effective power point presentation (data not shown). Finally, high student satisfaction with their experience in this course is evident based on their willingness to recommend this course to other students (Table-2).

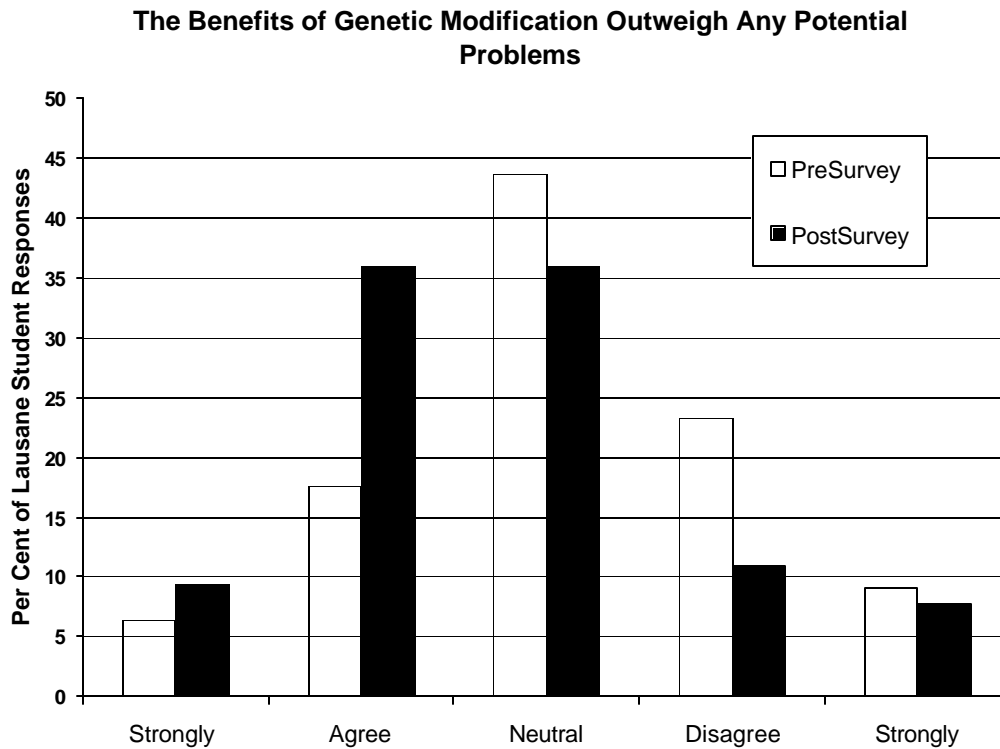
Table-2 Impact of Course on Student Understanding. The eight student participants were asked to respond to the questions below using a 1-5 scale where 1 indicated strongly disagree and 5 strongly agree. The average response and ± 2 standard error are shown.

Questions:	Average	$\pm 2SE$
My interest in environmental issues has been increased by this class	4.38	0.26
My interest in the federal legislative process has been increased by this class.	4.25	0.25
The speakers from the local community enhanced my understanding	4.35	0.18
I have a clearer understanding of what congressional staffers do	4.50	0.19
I would recommend this class to students with interests similar to mine.	4.38	0.26

Student participants developed a pre and post survey tool to assess the effectiveness of their presentation on student understanding and student opinions on issues related to genetically modified organisms (GMOs). Each question on the survey was analyzed

individually and within the class rank, both before and after the presentation, to determine the effectiveness of the presentation. An example of one such question in the survey is presented in Figure-1. The results from this question suggest that LCS student views regarding the long term benefits of GMOs were influenced toward favoring the utilization of GMO products (Figure-1) a position endorsed by the class. Also, the student-developed surveys indicated an increased understanding and appreciation for a variety of issues related to this bill (data not shown). The presentation also effectively increased LCS student appreciation for the importance of environmental issues and improved their understanding of some basic scientific content related to genetic engineering (data not shown).

Figure-1 The Impact of the Class Presentation on LCS Student Body. A survey was administered to the entire LCS student body prior to and following the class presentation. LCS students were asked to indicate how closely they agreed with a variety of statements on a scale of 1 (Strongly Agree) to 5 (Strongly Disagree). An example of the results from one question (The benefits of genetic modification outweigh any potential problems.) are shown below.



CONCLUSIONS

This approach to teaching environmental public policy formulation to high school students is successful. Students showed an enhanced understanding of the legislative process and learned to recognize and effectively evaluate varying perspectives on environmental legislation. They also improved important learning skills related to the critical analysis of information from a variety of sources and were able to synthesize new ideas and views and present their findings in a coherent and persuasive fashion to both

their peers and Congressional staffers. Further, the involvement of the entire LCS student body in this project through presentations and surveys increased awareness of the importance of environmental issues and how multiple perspectives need to be considered when formulating environmental policies.

REFERENCE LIST

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