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MULTI-DISCIPLINARY STUDY, RESPONSIBLE POLICY-MAKING, AND PROBLEM-BASED LEARNING IN HONORS COURSES

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ABSTRACT

This paper explains how problem-based learning (PBL) is incorporated into a multi-disciplinary, team-taught honors seminar, "Poverty amidst Plenty," by means of an eight-step process that implements a curricular metaphor—student as legislative aide. The process allows students' self-directed skills to develop while faculty roles in the course change from instructors to resource and research guides. In turning their research into policy position papers, students develop and share sources, strategies, and solutions. They also acquire web-design skills in order to cultivate informed "outside constituencies" supportive of their policy positions.

In addition to a course-planning strategy that can be modified to fit most course contexts, whether for honors students or the general student population, the paper provides an outline of the important elements of the PBL approach—problem, process, student, instructor, learning goals, and outcomes—and offers reasons for its success. "Poverty amidst Plenty" gives students the opportunity to acquire an understanding of economics and ethics and to form an integrated, multi-disciplinary knowledge base. This occurs in a "real-world" context that demands that students gather information, evaluate it, and then use it to make judgments. As a result, the course satisfies important measures of authentic learning and fosters a form of learning that typically emerges only after students have graduated from college.

INTRODUCTION

In fall 2000 I joined forces with an economist to teach an honors seminar at Barat College, a wonderful opportunity for a philosopher to make a direct connection to concrete issues. The course we developed was entitled "Poverty amidst Plenty," a fitting reference to the fact that the Barat campus in affluent Lake Forest, Illinois, is barely five miles from an overburdened soup kitchen.

Some consciousness of national and international economic inequality already existed on campus, as evidenced by the recent tradition of holding an annual "Hunger Banquet." The featured speaker in 2000 was the director of research and public policy at America's Second Harvest, the nation's largest domestic hunger relief organization. There was also a student speaker, a junior enrolled in "Poverty amidst Plenty." The student's talk—on hunger in India, its nature, its extent, its victims and its causes—was informed and informative, passionate and compelling. Indeed, so compelling that she was offered a paid summer internship at America's Second Harvest.

How did this student come to be so well prepared that she could walk right out of the first class in which she had ever studied economics or ethics and into an internship that will see her travel to Washington, D.C., to lobby Congress?

METHODOLOGY

Like many other honors programs, Barat's offers team-taught courses that bring a multi-disciplinary approach to the study of themes, ideas, and policy issues. Often, however, while students experience stimulating courses, they do not come away with the skills needed to synthesize multi-disciplinary perspectives into coherent learning frames. To avoid this pitfall and provide students with the necessary pedagogic pragmatics, Barat faculty have included problem-based learning (PBL) as a key curricular emphasis in the honors program.

Although the ancestry of PBL has been traced back to the first quarter of the 20th century and perhaps as far back as Plato's Academy, it is a pedagogy first systematically developed in medical schools beginning in the 1960's and now widely employed in medical education. From medical schools it spread to K through 12 and then found its way into professional schools. Only recently has it started popping up in liberal arts curricula.

A working definition of PBL involves five elements. PBL must be built on "messy" real-world *problems*. A messy problem is open-ended or "ill-structured," such that there is no anticipated solution and no set formula to reach one. Being ill structured does not mean lacking in structure; indeed the problem must be carefully structured so that important content is covered naturally, emerging from the exploration of the problem.

The *process* is student-centered, integrated, and collaborative. It seeks to capture the ways people solve and resolve problems and meet the recurring challenges that they encounter both as individuals and as citizens. Notwithstanding the distinctions that are sometimes drawn between inquiry-based or research-based learning and problem-based learning, PBL is rooted in inquiry. The problem generates inquiry, which leads to the acquisition of new information, which in turn causes an evolution in the problem.

The *students* become self-directed learners, stakeholders having authority, accountability, and responsibility for their learning. They must assess what they know and what they need to learn. They must gather the necessary information, then generate and evaluate hypotheses in light of their research, a process that typically requires more research.

The role of the *instructor* is to set up and present the problem, then to serve as tutor, coach, and resource, guiding research and assisting in the interpretation of data.

The final element is *learning goals and outcomes*. Students acquire an extensive, integrated, multi-disciplinary knowledge base; critical and creative thinking competencies; problem-solving proficiency; self-directed learning strategies; and collaborative skills. Moreover, retention, retrieval, and appropriate use of information are improved.

"POVERTY AMIDST PLENTY"

Television broadcasts of hearings held by the Senate Foreign Relations Committee show a row of senators perched on high. Seated in a second row behind the senators are their legislative aides. It is these bright young men and women who have done the research and created the policy papers that inform the questions and comments of their august employers.

The "Poverty amidst Plenty" seminar was planned around a curricular metaphor—the twelve students, each assuming the role of Senate legislative aide, were given the task of preparing a responsible economic policy position on a given country that could affect U.S. foreign aid to that country. The instantiation of the metaphor may be summarized in eight steps:

1) Create a picture of the present economic state of the student's chosen country—pairs of students select pairs of countries that share certain similarities but also present potentially revelatory contrasts, e.g., China & India; Haiti & Cuba; Singapore & Indonesia.
2) Determine the degree of (in)equality in assets and income, as well as its nature—if there is a divide, is it racial, ethnic, religious, regional, hereditary, etc.?
3) Research the factors that have contributed to the present state of (in)equality—these factors turned out to be political, social, cultural, religious, educational, historical, and, interestingly, geographic.
4) Judge the desirability/optimality of the present distribution of wealth in economic and human terms.
5) Determine what policies—both internal and external—are contributing to the maintenance of, or changes in, that distribution and evaluate their effectiveness in economic and human terms.
6) Recommend any changes in present internal policy or new internal policies that would be effective given the factors discovered in step (3) and provide a rationale.
7) Recommend any ways in which U.S. policy toward the country of study could support the recommendations in step (6) and provide a rationale.
8) Design and create a website intended to develop "outside constituencies."

This metaphor turned out to be so close an approximation of the real world that it was barely metaphorical at all: Our Hunger Banquet speaker, himself a former legislative aide on Capitol Hill, urged the audience to visit the Second Harvest website, learn about his organization's initiatives and then write their Congressional representatives.

As their semester-long research project evolved, the students

- presented oral reports to the class on step (1),
- produced initial html documents on steps (1)-(3), with bibliography and web directory,
- presented oral reports to the class on their penultimate drafts,
- produced single-country websites, and
- synthesized the seminar's findings.

Future versions of the course would include mock committee hearings for the campus community.

The course assumed no prior knowledge of economics, moral and political philosophy, or web-design skills. In the classroom and out, the professors provided instruction in those areas, while also offering guidance in data-gathering and interpretation. The economic state and policies of the U.S. and other countries were used as extended instructional examples.

Students' final web products are available for them to demonstrate vividly to graduate schools and potential employers their ability to

- perform research in subject areas where they may have little initial knowledge,
- analyze the information they gather,
- evaluate public policy in context,
- make informed recommendations backed by persuasive evidence, and
- present a compelling case both orally and in written and graphical form in the latest medium of communication.

WHY THE COURSE WORKED

Why did this course succeed? Because the PBL approach produces authentic learning and contextual knowing. Consider the five measures of authentic learning identified by Newmann and Wehlage:

- Higher-order thinking
- Depth of knowledge
- Connection to the world beyond the classroom and academic setting
- Substantive conversation
- Social support for student achievement

All five of these measures were satisfied by "Poverty amidst Plenty." Students synthesized information in order to develop and then test hypotheses. They developed arguments and constructed explanations on the basis of carefully drawn distinctions. The consideration of real-world problems led them not only to propose solutions but also to engage in advocacy of them to others. The interactive process led to pooling of information, sharing of insights, and development of collective understanding. An atmosphere of high expectations and mutual respect produced quality results. (As a philosopher, I like to think of the Socratic method as the prototype of authentic learning.)

Marcia Baxter Magolda's research indicates that the most epistemologically sophisticated kind of learning, which she calls "contextual knowing," typically emerges only *after* students have graduated from college. However, the PBL approach as incorporated in "Poverty amidst Plenty" requires that students engage in the simultaneous and ongoing assessment of their own beliefs, the evidence they gather, and the perspectives of their peers, the kind of assessment that is central to contextual knowing.

FURTHER APPLICATIONS OF THE MODEL

It is my hope that the theoretical overview and the course outline I have given provide a course-planning strategy that can be modified to fit most honors course contexts as well as many contexts outside the honors domain. I anticipate using it in a course that includes a significant experiential learning component. The course, entitled "Chicago Hope," will examine the four prerequisites for the pursuit of happiness and the people who lack them: those who do not have dependable access to food, shelter, healthcare, and education. Students will visit public schools and a healthcare clinic and work at a soup kitchen and homeless shelter. Having gained this firsthand experience, the students will choose an issue, research needs and policies related to it, and create a policy recommendation. I anticipate that their research will include work in libraries and on the Internet, as well as emailing, telephoning, and interviewing representatives of government agencies and nonprofit organizations. I can easily envisage a course on environmental concerns that has the same structure. Surely there are as many course possibilities as there are social causes to work for, corporate interests to assert, and political issues to address.

SELECTED SOURCES

Educational Leadership, a journal published by the Association for Supervision and Curriculum Development, devoted its April 1993 issue to "Authentic Learning." The complete

issue is available online at <http://www.ascd.org/readingroom/edlead/9304/toc.html>. Of particular interest are

- Newmann, F. M. and Wehlage, G. G. (1993). Five standards of authentic instruction,. *Educational Leadership* 50:8-12. Available online at: <http://www.ascd.org/readingroom/edlead/9304/newmann.html>.
- Stepien, W. and Gallagher S. (1993). Problem-based learning: As authentic as it gets. *Educational Leadership* 50:25-28. Available online at: <http://www.ascd.org/readingroom/edlead/9304/stepien.html>.

Both these articles are reproduced in the useful anthology:

- Fogarty, R. Ed. (1998). *Problem-Based Learning: A Collection of Articles*. Arlington Heights, Ill.: Skylight.

For PBL at the college level, see

- Wilkerson, L. and Gijselaers, W. H., Eds. (1996). *Bringing Problem-Based Learning to Higher Education: Theory and Practice*. San Francisco: Jossey-Bass.
- Savin-Baden, M. (2000). *Problem-Based Learning in Higher Education: Untold Stories*. Buckingham, England: SRHE and Open University Press.

On the Internet, a good starting place is the website run by the dean of PBL, Howard Barrows, M.D., Professor Emeritus, Dept. of Medical Education, Southern Illinois University:

- "Problem-Based Learning Initiative." <http://www.pbli.org/core.htm>.

The research underlying the notion of contextual knowing may be found in

- Magolda, M. B. (1992). *Knowing and Reasoning in College: Gender-Related Patterns in Students' Intellectual Development*. San Francisco: Jossey-Bass.
- Magolda, M.B. (2001) *Making Their Own Way: Narratives for Transforming Higher Education to Promote Self-Development*. Sterling, VA: Stylus.

For a clear, concise guide to web design, see

- Castro, E. (2000) *HTML 4 for the World Wide Web*. 4th Ed. Berkeley: Peachpit.

AUTHOR BIOGRAPHY

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