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Trees and Water: Mainstreaming Environment in the Graduate Policy Analysis Curriculum

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ABSTRACT

In this article, we describe and evaluate a teaching project embedded within a core policy analysis course that allows students to engage with a major public policy issue—in our case, environmental policy—without a corresponding cost in terms of reducing curricular space for developing general policy analysis skills. We think that a win-win arrangement is attainable: a fairly intense immersion into a key thematic area of public policy and a correspondingly more vivid, realistic, and integrated treatment of general policy analysis. The project has the potential to allow teachers and students to explore in depth and develop the skills and appreciation required for practice in any major policy area, even in tightly packed graduate policy programs.

I. SEARCHING FOR A WIN-WIN DESIGN: MORE POLICY ANALYSIS THEORY *AND* MORE SECTOR-SPECIFIC CONTENT

In tightly packed graduate policy programs, the curriculum leaves little space for teachers and students to explore and develop an appreciation and the skills required for the practice of any major policy area that is outside their rather narrowly defined primary areas of concern. Students are expected to rapidly develop knowledge of and basic skills in general themes about policy processes and trends, and later to specialize in one or at most two focal areas of policy interest through electives. This limits the opportunity to impart policy-relevant knowledge about a range of major public policy concerns, such as environmental policy or health policy, to a larger nonspecializing audience. We feel this is unfortunate. Moreover, because of time constraints, even the basic knowledge and skills in public policy processes and analysis are often less developed than would be ideal. There is substantial evidence from the literature on public affairs education that action learning in the form of in-depth, student-led exploration of well-defined themes contributes greatly to general learning objectives (Breen, Matusitz, &

Wan, 2009; Hartley, 2009; Kramer, 2007) but that such activities are infrequent because of packed curricula and time pressures. Our own institute used to provide an end-of-program, 6-week, full-time "synthesizing exercise" for Masters students, to expose them more intensively to the interface of theory and reality; but this was displaced eventually due to the need (for purposes of academic accreditation) to use that space to ensure appropriate depth in all students' thesis work.

In this article, we describe and evaluate the design of a project embedded within a core policy analysis course that allows students to engage in a major area of public policy—in our case, environmental policy—without a corresponding cost in terms of reducing curricular space for general policy analysis skills. While the rest of the article focuses specifically on how we integrated environmental policy into the general policy analysis course, we should emphasize here that the architecture of this teaching experiment can be adapted to serve any major area of public policy based on the instructors' and students' interests, and that the article can be read equally fruitfully by viewing the use of environmental policy as an illustrative tool rather than as a primary policy concern. The first half of the article describes in detail the considerations behind the course design, including the large-scale environmental policy analysis project, in comparison to our previous approach. The second half then presents our experiences with the redesigned course, in terms of course management and dynamics, and levels of student achievement and fulfillment of learning objectives.

Our own decision to focus on environmental policy was based on several factors. The advent of climate change as an increasingly likely potential calamity has propelled environmental policy into the mainstream of core global policy concerns. There is now a more broadly shared interest in environmental policy as, in the absence of ready technical solutions, climate change requires us to reflect on basic questions of production and consumption. In recognizing the more systemic roots of climate change issues, which require natural and social scientists, engineers, and philosophers (among others) to work together, a transdisciplinary space for inquiry and action has emerged. The outcomes of these debates, as well as the processes they will use and the forums where they will be conducted, concern us fundamentally as policy scientists, in our positive as well as our normative analyses and engagements. We are required to understand emerging trends, and we are also required to train future actors in these arenas. Managing these policy questions requires integrative skills and the ability to make decisions while being cognizant of competing values, claims, and priorities, all in a context characterized by incomplete and conflicting knowledge and information. Stimulating and developing knowledge about environmental issues in a range of students broader than those that fall under the generic label "environmental studies" has thus become an important challenge confronting graduate public policy and management programs. We offer one technique to address this need.

We think that a win-win arrangement is attainable: on the one hand, a fairly intense immersion in key environmental policy themes, made possible by the very nature of the issue that renders it a more accessible and familiar policy area to students than most others; and on the other, a correspondingly more vivid, realistic, and integrated treatment of general policy analysis themes—about debates over facts and values, rights and responsibilities, focus and feasibility.

In our course we focused on two increasingly stressed resources—forests and water—with very different characteristics that are critical to sustainable development and planetary resilience. Questions about "trees" and "water" are no longer domains of specialization, but have become mainstream global problems with potentially far-reaching consequences.

2. An Environmental Policy Analysis Project as an Ongoing Strand Within a Course on Policy Analysis

Course Objectives and Structure

Our course, Policy Analysis and Design, is the second-semester core course in a Public Policy and Management (PPM) specialization within the International Institute of Social Studies (ISS) Master of Arts in Development Studies curriculum. ISS in The Hague (http://www.iss.nl) is a graduate school of development studies oriented to an international clientele drawn from around the world. Most of ISS' students enter with 2 to 15 years of work experience. Founded in 1952, ISS is now part of Erasmus University Rotterdam.

Policy Analysis and Design is a standard-length course, which in our system represents about 35 hours of classroom teaching and tutorial time and a target of about 200 hours of student input in all, spread over 12 weeks, for an average student to obtain an average mark. This figure of 200 hours includes the time for reading and project and exam preparation. The objective of this course is to make students "more thoughtful, effective, and equitable participants in policy analysis" through imparting knowledge in (a) the understanding of policy theories, concepts, tools and techniques; (b) skills in their use; and (c) awareness of value aspects in policy analysis. It builds upon a first-semester course, Policy Processes in Context, in which students are introduced to the history of the field of public policy analysis, its main concepts, and the diverse perspectives through which the field is approached and constructed. Students who have not taken the latter course may register for Policy Analysis and Design subject to the instructor's permission. These students take a two-session remedial tutorial on some classic introductory readings on public policy.

In terms of content, the course is divided into three blocks. The first block, Standard Analytic Approaches, deals with policy analysis from economics and systems analysis perspectives. The topics are representative of different impor-

tant strands in policy analysis and public management: the "logical framework approach" (known also under the labels of objectives-oriented management and results-based management), which follows systems analysis approaches, usually within a top-down management perspective; cost-benefit analysis, which represents and slightly adjusts market-based economic thinking; cost-effectiveness analysis, which is at the intersection of the two previously mentioned strands; and multi-criteria analysis, which here represents a move toward a more debate-oriented, participatory approach and brings in a wider range of value criteria (Gasper, 2006). We cover the principles underlying these methods, their rationales and contributions, and their limitations and potential biases.

The second block, Policy and Policymaking as Political Argumentation, addresses the use of language and arguments in policymaking, including the typical elements of policy arguments and systems of arguments, and how to construct, test, and present them more effectively (Apthorpe & Gasper, 1996; Dunn, 2008; Fischer & Forester, 1993). It helps students to probe the meaning of key terms used, such as *efficiency* and *effectiveness* (Gasper 2004, ch. 3), and how to critically investigate, evaluate, and construct a policy argument. It gives particular attention to drawing out and reflecting on the assumptions about values—including values about outcomes and values about processes, and how value conflicts are handled—as well as the assumptions about policy instruments.

The third block, Exploratory Approaches in Policy Design and Assessment, looks at more advanced skills of general relevance in policy analysis, notably: (a) how to analyze and assess a policy position not only as a system of arguments but also as involving the use of particular mental frameworks, images, and packages of assumptions, which typically reflect the worldview of particular "interpretive communities"; (b) how to contribute to building alternative frameworks, arguments, options, and scenarios; and (c) how to understand and participate in inter-, not only intra-, community deliberations. So the block includes attention to both exploratory cognitive techniques and the social processes of discussion and decision making that can contribute to group (re-)formation and rethinking (White, 1990).

Our Traditional Teaching Methods

Earlier versions of this course always included group-based case study and workshop exercises in which students were provided with one or a few relatively short readings on each of a series of policy issues—ranging from privatization to national parks management to casino gambling—that they were required to analyze and present to the class. The objective was for students to explore policy processes in terms of the range of stakeholders involved and their political views, the technical and financial constraints on potential solutions, and the limits of comprehensive rational planning and policymaking. These exercises would increase in intensity through the course, and each exercise would cover a com-

pletely different policy issue.

As activity-based learning exercises, these case studies and workshops supported several of our course's learning objectives that were aimed at building core intellectual skills, such as (a) to find, integrate, and analyze facts while exercising good judgment; (b) to work collaboratively; (c) to reason, debate, and defend positions; and (d) to respond to problems arising from incomplete information and uncertainty.

However, none of these four objectives was fully realized due to the limited scope of each of the exercises. The achievement of the first objective, related to skills development in finding, integrating, and analyzing facts, was limited due to the exercise being restricted to the analysis of only a few given texts. Time constraints did not permit us to assign students tasks that would require them to do independent research and incorporate *their* findings into *their* analyses.

With regard to the second skill, although the students were divided into groups and required to prepare the presentation as a team, the limited scope of each exercise and the fact that only a group grade was awarded (or that some exercises were purely for learning purposes, not also for assessment) meant that some students could free-ride without much resistance from the other students, whose main aim was to get through the exercise as quickly and as well as possible. This limited effective collaboration and teamwork to the more conscientious students. The benefits of "forcing" effective participation from potential free riders in a group were perceived by those students as much less than the costs of confronting them.

The third skill was realized also only to a limited extent because although there was a space—typically of about 10 minutes—after the student presentations to discuss and critique their material, we used this space more for providing feedback rather than for students to actively debate and defend their positions and conclusions. Moreover, the fact that students felt no ownership over the texts on which the exercise was based meant that they often did not engage fully with the content.

The fourth skill was also little developed: given the limited number of texts involved as the basis for the presentation, students did not engage much with issues of incomplete information and uncertainty. Instead, they effectively drew a boundary around the given material, and relegated incomplete information and uncertainty to ceteris paribus status.

Our Redesigned Methods for Teaching and Learning—The Environmental Policy Analysis Project

Having in mind these limitations, we redesigned the course in 2009 by introducing a policy analysis project (PAP) to run throughout the term. Two broad topics were selected, and each student was assigned to a group to work on one of the topics. Our intention was to replace the discrete and limited case study and

workshop activities with a comprehensive activity that would run throughout the semester. This activity would present the students with a broadly defined policy issue and require them to generate the information and arguments required to support their diagnoses and proposals.

We expected 25 to 30 students to enroll in the course and decided that, given the need for intensive tutoring and feedback, four groups would be the maximum that we could reasonably accommodate into the course schedule. Eventually, 32 students enrolled and we made four groups of eight, with two groups per topic. Initially, we feared that this could give unwieldy groups, but in the end this was not a problem.

When we began brainstorming about potential policy issues that could serve as the topics for these exercises, we were concerned about whether students would be able to make reasonably detailed policy analyses for a topic they had not previously been exposed to in anything more than a superficial manner. Surely it would require a substantial investment of time to develop an understanding of the literature that underpins any important and complex policy issue? Given what we expected our students to deliver (which we describe later), we concluded that the issues selected would have to be in some sense popular; that is, issues students would have been naturally and repeatedly exposed to over a considerable period. This would reduce the need for us to spend time familiarizing the students with the basic aspects and importance of the topic. We were also concerned whether some students would resent having to invest a considerable amount of their time focusing on a policy problem that was outside their main and immediate academic and professional interests.

We decided that environmental issues satisfy the criteria of sufficient popularity and prior general exposure. First, environmental issues have long figured prominently and in detail in general news coverage, which means that the students enter the course with a basic familiarity with the intellectual terrain. Second, nearly all students seem to have a natural affinity for the issues, inasmuch as the theme is broad enough to include a wide variety of intellectual and analytical approaches, ranging through the natural sciences to the social sciences and the humanities. Finally, these themes are in the general community interest domain, and their decision dynamics are not restricted to narrowly defined, epistemic communities. This means that a variety of policy approaches are relevant in their study.

We chose two themes within the broad field of environmental and resource issues. Two student groups were assigned to each theme, which facilitated a degree of competition and critical feedback between paired teams.

The first theme, which we will call "Trees," asked students to develop advice for policymakers on the trade-offs between forest protection and economic growth. The students were given the following scenario: They are in a mid-sized developing country with a substantial forest endowment. The students were told

that this could be any country of their choice, but that they needed to focus on generic policy issues rather than on country-specific facts and figures. In the end, one of the groups chose Peru and the other chose Nepal, which we found to be apt. They were then told that thus far the governments of their countries have pursued an environmental policy that has prioritized economic growth over forest protection. The national environment policy is now being debated in the legislature and the wider polity, and the concerned policymakers want independent analyses of the fundamental trade-offs involved and the short- and long-term consequences of prioritizing forest protection over economic growth, and vice versa. One group of students was told to argue for better protection, and the other was instructed to argue for accelerated economic growth. We also told the students that they should think about these national and local concerns about deforestation as embedded within the cross-border debates around climate change.

The second theme, which we call "Water," asked students to advise the government in a large city in a developing country on how to meet its population's need for water and sanitation services and also reduce environmental pollution through the construction of wastewater treatment facilities. The students were provided with the following scenario: The chief executive of the city needs a large amount of financing to increase the capacity of the city's water agency to extend water and sanitation services to the growing population of the city. However, the government is fiscally constrained, and multilateral aid agencies say they are unwilling to provide funding unless the chief executive agrees to a privatization program. As with the previous groups, the Water groups were able to choose any city; but they both settled on thinking in generic terms of a city in a developing country as the basis for their project rather than identifying a particular city.

Our Redesigned Methods for Teaching and Learning—The Sequence of Activities

Over the course of the semester, the students were required to prepare a policy analysis report. The target length of the report was 50 to 80 single-spaced pages (i.e., 7 to 10 pages of output per student) and it consisted of three parts, corresponding to the three blocks of the course. These three parts were built up through three assignments, each due at the end of the corresponding block. Each assignment required, for each group, a 30-minute classroom presentation and an accompanying draft written report. After a week to incorporate feedback received during their presentation, each group submitted a final written report to obtain more detailed feedback from the instructors (rather than at that stage to obtain a grade).

The first assignment covered the methods introduced in Block I and required students to prepare an analysis of the problem situation using the logical framework approach: The assignment thus included a stakeholder analysis, problem-tree analysis, alternatives analysis, and tentative solution-tree(s) analysis as well as a set of criteria for evaluating the policy alternatives by using a multi-criteria decision approach. Our teaching objectives were to enable students to undertake

comprehensive analyses of policy problems—using tools such as problem trees—to determine, classify, and analyze the various interest groups through stakeholder analysis and to create a policy evaluation framework using multi-criteria analysis. The unstated objective was for students to realize how complex policy problems and solutions become as we probe them in greater depth.

To accelerate the process of problem analysis, one of the instructors and the teaching assistant prepared a bibliography of about 60 relevant articles for each of the two themes. Endnote files including the articles' abstracts were provided to the students, who were instructed to divide the articles among the group and first to scan them for content and relevance. This stage was, as we had expected, the most stressful for the groups as they had to quickly absorb the material and develop their initial problem trees. There was an initial shock when the volume of references was first presented to the groups, since each member felt she or he had to read each article, but this dissipated after it was explained that dividing the readings among themselves would result in an individual load of seven or eight articles each.

The second assignment was due at the end of Block II, and it required students to prepare two types of policy argument structures for each of at least two policy positions. One structure is an adjusted version of the well-known Toulmin format for describing argument structure (Toulmin 1958), which is applied to policy arguments in, for example, William Dunn's standard textbook (2008) and by many other authors. The format has several attractions: It encourages digging out underlying assumptions and identification of possible counterarguments and qualifications. Toulmin's own diagrammatic format is, however, prone to misuse by non-experts, and a tabular format prepared by R. V. George proves more workable and reliable (Gasper & George, 1998). Table 1 shows that format applied repeatedly, to describe a whole set of arguments that have interconnections. This layout, whether with one or multiple rows, is called a synthesis table (Gasper, 2000, 2002).

The Toulmin-George format applies to any argument or system of arguments. It gives no policy specifics to guide people's thoughts; its role instead is to guide people to think in a context-specific way about the case concerned.

The other format derives from Ralph Hambrick's identification of the types of proposition that he found in a large set of U.S. policy documents (Hambrick, 1974). Gasper (1996) arranged these 10 or so types into a series of three stages that show the imputable structure of a typical policy argument. Its first stage contains the cause-effect story contained in a policy proposal. The second stage contains "normative propositions" that proffer the normative justification for such a policy initiative, in terms of the quality of both the processes and the outputs. It attempts to convert the if-then proposition to a means-ends proposition in which both the means and the ends have been validated as sufficiently justified. The third stage involves testing the means-ends proposition in a variety of ways. A detailed illustration of the format—prepared by one of the Trees groups—is provided in the Appendix. Used as a design tool, not merely as a tool

Table 1.
Synthesis Table for Presenting the Structure of an Argued Position

I Claim [this conclusion],	*given this Data (empirical facts)*	*and this Principle (or principles = theoretical and/or value statements);*	*Unless (/except when) one or more of these counterarguments applies*
Conclusion 1	Data 1.1 (1.2, ...)	Principle 1.1 (1.2, ...)	Rebuttal 1.1 (1.2, 1.3, ...)
Conclusion 2	Data 2.1 (2.2, ...)	Principle 2.1 (2.2, ...) (e.g., including Conclusion 1)	Rebuttal 2.1 (2.2, 2.3, ...)
...	...	...	...
Destination conclusion	Data D.1 (D.2, ...) (e.g., including Conclusion C from a previous row)	Principle D.1 (D.2, ...) (e.g., including Conclusions A, B from earlier rows)	Rebuttal D.1 (D.2, D.3, ...)

Note. For a fuller explanation, see "Fashion, Learning and Values in Public Management: Reflections on South African and International Experience," by D. Gasper, 2002, *Africa Development, 27*(3).

to describe an existing position, the stage of tests will typically identify gaps and weaknesses that require at least modification of the set of instrumental propositions, try to include measures that cope with the actual constraints, substantially reduce the undesirable external impacts, and maximize the desirable and reinforcing external impacts, and overall try to increase the coherence of the proposal.

These two complementary formats provide both trees and water in argumentation, figuratively speaking. The Hambrick format provides a policy-relevant structure that helps focus students' thoughts, and the Toulmin-George format

then nourishes this structure by directing attention to counterarguments and giving more space for the specifics of the situation and the disputes in question. And conversely, the Toulmin-George format is often used by students to, in effect, establish the core "causal proposition" that they will then take up as a narrative through the successive stages of the Hambrick format, to ground the proposition both positively and normatively, elaborate it by identifying accessible feasible policy instruments that can activate that proposed causal chain, and test it in diverse ways,.

The third and final assignment was due on the last day of class. It required students to integrate the first two exercises—problem analysis and analysis of competing policy arguments—to develop their own policy recommendations and then present these in class. The Tree groups presented first, for 30 minutes each. Then the two Tree groups sat across from each other as each group posed several questions, challenging the other group on its analysis and policy recommendations. After the groups finished challenging each other, they fielded questions from the rest of the class and from the instructors. The Water groups presented next and followed the same format. At the end of the exercise, the Tree groups voted for the most convincing Water group presentation, and vice versa.

A final report was due at the end of the semester, after the final examinations. This report consisted of an updated version (after receiving feedback during the workshop discussions and in addition later from the instructors) of the first two reports, which had to be consolidated together with the reasoned final policy proposals and an overall summary.

Grading and Evaluation

In earlier years, the group exercises would account for 15% of the students' final grade. Given the scale and intensity of the project work in the new course design, the PAP accounted for 50% of the students' final grade, including 35% for an individually attributable contribution and 15% for the overall group performance. (Students also write a closed-book examination on the theories and approaches covered in the course, for the other 50% of the grade.) To help control for free-riding, we required students to divide the written submissions between them and clearly identify which students took responsibility for which sections.

3. STUDENT PERFORMANCE

In this section, we explore how the students performed in each of the three assignments, the problems they faced, and how we dealt with them. We also present our observations of group dynamics. Besides our own impressions and what was reported to us by the students, verbally (in plenary, in groups, and by individuals both during and after the course) and in the end-of-course questionnaire, we draw also on the observations of the course teaching assistant, who was available on a 50% basis and was regularly called on by groups and individu-

als for guidance and feedback. We will later link these observations on group dynamics and on performance to the learning objectives defined for the course as well as to the objective of developing knowledge about environmental issues. We rely mostly on informal discussions and reflection and confess that most of these sources are not formal evaluation techniques, which are, as Goodman (2008) notes, difficult to perform in cases such as ours.

Process and Dynamics

We found that much of our feedback and comments to students during the stages of workshop preparation and evaluation were similar to what we tradition-ally provide to them on essays: issues regarding clarity of problem definition, writ-ing style, and analysis. However, we expected that this year we might encounter significant new tensions and group dynamics related to the course project.

Tensions did surface at various stages of the exercise. On the whole, the stu-dents found the first assignment to be the most stressful. This resulted primarily from them being as yet unfamiliar with the contours of the policy issue, unclear about what the instructors were looking for, and uncertain about how to divide tasks and work in a group. We also left it to the student groups to progressively specify additional context parameters for their cases, beyond those given at the outset, such as whether to clearly specify a country or city or use a generic place. They were welcome to consult with us, but we wanted them to feel co-owners of the exercise and to think about what types of information they needed. The co-responsibility for defining the exercise also brought some tensions, but these faded.

Besides tensions, there was impressive involvement. Sometimes students got carried away in the role playing and claimed to have done certain kinds of analy-sis when clearly they had not. For example, in discussing multi-criteria analysis, one of the Water groups claimed that they "organized a focus group discussion where key local government officials (decision-makers) were asked to give their opinions about the importance of each of the above criteria." In our opinion, this was a result of students getting carried away in the role playing rather than an attempt to lie for gain. Making exaggerated claims without any supporting evidence was another problem that surfaced repeatedly. We attribute this partly to the competitive angle and partly to poor argumentative skills or maturity, but it was also a sign of enthusiasm.

During the initial stages, a few students tended to dominate and set the direction of the groups' argumentation structures, not always in a sensible direction. This was corrected through tutorial sessions in which the instructors encouraged each student to contribute to the discussions.

There was some element of free-riding, but all indications point to it be-ing considerably reduced in comparison to the group work exercises in previous years. Although we did note an imbalance in the output of individual students, it appeared that some students dominated the process because of their enthusiasm

and initiative rather than because of deliberate free-riding by others. Every student contributed substantially, in at least some stages of the public discussions in tutorials and workshops as well as in their "signed," individual written contributions. However, whether the aggregate balance for the course as a whole shifted away from free-riding and toward universal contribution is still unclear.

Overall, we drew the following lessons. For the students, we advised them to treat the intragroup tensions as part of experiential learning and as food for thought about policy processes. We also suggested that they might, for example, use parallel thinking to better structure group deliberation processes: collecting points of a particular type all at the same time from all group members (e.g., what are the advantages of doing X), then separately collecting points of the next type (e.g., what are the disadvantages of doing X), and so on, rather than the typical intragroup contestation in which one member's comment in favor of X immediately elicits another member's criticism of that view, leading to personalized position taking.

For ourselves, lessons include that we should probably have specified countries (or a small set of countries for student groups to choose from) to which the groups should have related. Time was wasted because groups lacked parameters, and different members pulled in different directions. Similarly in need of some further structuring is the allocation of work between individuals within groups, to ensure not too dramatically unequal loads and to ease the subsequent identification and grading of individual contributions. Under-specification of the assignment can exacerbate the collective action problem and generate an attribution problem too.

Performance in the Assignments

In doing the first assignment, all the groups confronted similar difficulties. We did not expect this part of the assignment to be simple. It required students to become conversant with the techniques of drawing problem trees and associated forms of systemic representations as well as to understand the policy issues intimately. The logical structure of problem trees was understood by most students, but the drawing of the problem trees themselves raised several challenges.

- First, students often confused cause and effect, and this meant that they provided an incorrect hierarchical presentation of the problems.
- Second, students found it difficult to deal with sets of problems that were interconnected and that reinforced each other. In other words, they had difficulty in representing problems that were circular. One of the groups reported that they used mind map software (e.g., FreeMind or any of the other widely available freeware)—which graphically presents relationships among ideas and among pieces of information—to overcome the limitations of the vertical logic structure imposed by problem trees. This helped them trace and represent

> problems that have more of a feedback character than a simpler, unidirectional cause-effect character.
> * Third, the sheer volume of discrete problems appeared to overwhelm the groups in terms of finding a way to represent them in a problem-tree format. Students resolved this dilemma by dividing the problems into different "families" and tackling each family of problems separately.

The stakeholder analysis presented fewer challenges. Most mistakes were committed when students tended to agglomerate discrete and distinct interests under overly broad headings such as "government" or "private sector," thus failing to recognize the diversity of impacts and interests found within them.

The exercise to develop the multi-criteria analysis did not present significant problems. The assignment stated that students were required to develop a set of criteria, with a set of weights attached, by which their own and other policy proposals could be evaluated. The purpose in developing these criteria was to assist in dealing with trade-offs among competing and simultaneously desirable outcomes, which are inherent in complex policy proposals. The weights were supposed to reflect a ranking of priorities that would be acceptable to a broad group of concerned stakeholders. The students were cautioned that the setting up of relative weights, as one of the more subjective elements of multi-criteria analysis, was prone to abuse and manipulation; and so they needed to have good, plausible arguments to support their assignments of weights. With encouragement from the instructors, students displayed some creativity in coming up with these weights. Two groups choose to survey what they called an expert population (culled from the student and faculty population at our institute) and based their weights on the results of these surveys; a third group found a journal article and used the weights assigned therein. Groups were, in addition, warned that criteria should not be applied mechanically. There might well be minimum necessary levels of achievement on some criteria, which every acceptable option must fulfill regardless of how well it performs in terms of the other criteria. This could be particularly pertinent in relation to access to drinking water and assurance of ecosystem stability.

In the second assignment, we noted that the Water groups, who had worked on a task where various public sector reform packages are widely available and disseminated in the literature, showed less creative thought than we desired, and this persisted through to the final policy proposals. Students presented prepackaged solutions. To counterbalance this and to stretch their minds, we required that the Water groups explore in detail the case both for *and* against *more* than one option. For example, one group prepared such argument analyses for each of three different responses to the urban water and sanitation case: privatization, a public-private partnership (involving a concession for a fixed period), and a

management contract in which public ownership and strategic control would be combined with private sector management and operational control.

The three sections of the final reports submitted by the students were often linked in a somewhat disjointed manner, perhaps due to time limitations. This is not surprising given the stage of the overall study program in which these reports were due. Most of our students cannot yet have detailed sectoral knowledge (here, on environment) or theme knowledge (e.g., on different models of public sector reform and privatization) if they have not already taken courses on them.

However, we found that the final reports incorporated a fairly sophisticated understanding of policy issues, including how different components of the issues are interlinked and, often, how desired policy objectives are mutually incompatible, therefore requiring trade-offs, compromises, and design of tailor-made packages that contain multiple complementary measures. For example, in the Water groups, one group supplemented its advocacy of a management contract system by identifying supplementary projects whereby access for poorer people would be promoted. The other Water group picked up and advocated the less standard public-public partnership model, in a variant with echoes of David Ellerman's model (2004, 2005) of learning from local successes and south-south cross-fertilization, which we discuss during the course. Further, the latter group assessed their two policy options—public-public partnership versus a combination of build-operate-transfer for new infrastructure and operation-and-maintenance-contract for existing infrastructure—in terms of not only a multi-criteria set of desiderata but also a strengths, weaknesses, opportunities, threats (SWOT) analysis to think outside conventional expectations. This proved decisive for their deliberations, leading to adoption of an option that scored lower on the multi-criteria analysis but faced fewer risks and opposition.

4. REFLECTING ON THE PAP IN TERMS OF SKILLS DEVELOPMENT AND ACHIEVEMENT OF LEARNING OBJECTIVES

In reflecting on two pedagogical models in a recent article, O'Hare (2008) advocated strongly what he called Theory C (for *coaching*) Pedagogy as providing a better match to what students will later have to do in the workplace. He points out further advantages of Theory C teaching, such as obtaining more participation and less passivity from students, building more capacity for independent and creative thinking, and improving interpersonal skills.

In addition to these, we find several other advantages to the PAP in terms of achieving policy-specific learning objectives, both for general policy analysis skills and in environmental issues analysis. We obtained these additional benefits by making a more or less equal marriage of Theory C Pedagogy, represented by the PAP, with Theory T (or traditional lecture format) Pedagogy, which formed the basis of the lectures. We summarize these advantages next.

Skills to Find, Integrate, and Analyze Facts: The Value of Student-Generated Material

The PAP helped students to develop a deeper understanding of the techniques of policy analysis as well as of the substantive policy issues they tackled. The exercises required extensive student effort in synthesizing material and generating arguments and presentations. This was, as mentioned earlier, a time-consuming process. There is little doubt that if the students had spent more time in reading and reviewing material rather than preparing presentations and reports, they could have accessed a larger volume of relevant literature. However, the focus on obtaining more long-term learning and skills versus acquiring more short-term knowledge appears to be worth it. The value of student-generated material in the learning process is well known. A paper by Goberts & Clement (1999) tested this hypothesis, comparing the learning effects of student-generated information and arguments vis-à-vis summarizing of texts. In their study, students were given a text to read and then were divided into two groups: One group was asked to draw diagrams explaining the concepts in the reading while another group was required to write a summary of these concepts. The researchers found that although the students who drew the diagrams were able to convey less information than those who summarized the reading, they outperformed the other students in tests that measure descriptive and causal understanding of the reading. In our case, we found that having to build policy arguments by themselves forced students to develop a deeper understanding of processes, interlinkages, and underlying logic than they would have if we had placed greater emphasis on absorbing factual material and relatively passively ingesting other people's viewpoints.

Skills to Reason, Debate, and Deliberate

We found that the PAP was useful in honing deliberative skills. Having students "compete" on the PAP by setting up two groups to argue each issue facilitated skills development in reasoning, debating, and defending positions. Controversy encourages students to review known facts, identify additional information required to solve a problem and make a case, and continue the search to find and critically examine new information. Moreover, we find that one great advantage of the debate format in developing these skills is that critique from student peers is more likely to elicit enthusiastic rebuttals and active argumentation and learning, in comparison to gloomily accepted instructor criticism. The utility of debate and controversy as a learning tool is supported by other researchers (Ballantyne & Bain, 1995; Schweizer & Kelly, 2005), who found that confronting students with alternative viewpoints and evidence challenges and enhances their conceptions of issues and that, as a result of such teaching methods, students are able to formulate their own positions more clearly, better understand the viewpoints of others, and become aware of the inadequacies and inconsistencies in any given conception.

In addition, requiring the use of structured formats—such as showing argu-
mentation structure and presenting and debating competing positions—promoted
active student learning, produced a more realistic view about the issues (especially
about the limitations of any particular argument), and introduced political and
social dimensions and their interactions with other argumentation. We would add
here that the role of the "Unless" column in the Toulmin-George table and of the
"Tests" stage in the Hambrick format proved important in obliging students to
pay systematic attention to finding and assessing objections and qualifications for
every proposed item of data and every proposed warrant. It helped build students'
habits of care, precision, and judgment and improved their ability to construct new
and alternative policy proposals that grow out of some of the objections. While
the Toulmin-George and Hambrick formats are extremely useful also in teaching
outside of a large course project—they serve most of these roles even via small ex-
ercises—deepened reflection on warrants, and in particular on sources of authority
and purposes, becomes more widespread among students through the more intense
and difficult experience of a large project.

Skills to Recognize Values and Make Value Judgments

Through the PAPs, we were able to better address the issue of value judg-
ments. This issue has several aspects. One is that value judgments are implicit
in many policy contexts even though policy analyses often present themselves as
value-neutral. In the PAP exercises, we encouraged students to address the issue
explicitly by using the Hambrick format. In the format's extended version (Gas-
per, 1996), the second stage in dissecting the logic of a policy proposal articulates
its significant value assumptions. Further, since value judgments are judgments,
not mere opinions or intuitions, both policy argumentation formats—the Toul-
min-George synthesis table, too—helped students to deepen their sense of how
the selection of processes and criteria to make a policy judgment contain embed-
ded value judgments. Next, while Corney (1998) found that in the teaching of
environmental issues the teachers must make value judgments, we felt it would
be counterproductive to intrude strongly into the process of value formation
and did not ourselves take an explicit stance here. We instead presented a series
of relevant, but possibly conflicting, major values and value perspectives—hu-
man rights, economic growth, notions of equity, principles of sustainability, and
so on—without establishing a set of predefined values; and we constructed the
exercise as a policy debate that encouraged, and often even required, students to
explore and propound diametrically opposed viewpoints. The PAP format thus
required the instructors to remain value-neutral but at the same time be available
and engaged in order to provide concrete suggestions regarding the value content
and logic of each set of arguments and to push students to consider more care-
fully the character and range of the values they had used, explicitly or implicitly.
For example, we asked students to reflect on the value assumptions built into

economic cost-benefit analyses (e.g., Etzioni, 1995; Hoksbergen, 1986; Shue, 2006), on the alternative values represented in human rights–based approaches (Gready & Ensor, 2005), and on the values contained within different processes of discussion according to their degrees and forms of public participation.

Skills for Policy Analysis and Debate Under Complexity, Uncertainty, and Ambiguity

The PAP format was useful in developing skills related to policy analysis and policymaking under conditions of complexity, uncertainty, and ambiguity, which are characteristic of a range of major policy debates including environmental policy issues such as climate change. The approach we adopted requires students to delay the gratification of instant solutions to pressing policy problems and exchange it for the pleasures (and frustrations) of a more profound exposure to the technical complexities of an issue, the various stakeholders involved in them, and the debated and diverse possible roles of science and politics and the interactions among them (Verweij & Thompson, 2006). By actively courting complexity and controversy, we confronted students with classic ethical dilemmas, such as: Should protecting the forests be prioritized over improving livelihoods? Who sets the values? Who are the legitimate actors? In the Trees case, by issuing the challenge of presenting a local issue (deforestation) embedded in a cross-border environmental issue (climate change), we were able to include discussions about issues of global justice and address some of the tensions that permeate these issues, such as the observation that the worst environmental degradations exist in the poorest communities. In doing so, we feel we succeeded in tying environmental issues to other agendas and taught students how better to engage in the contemporary debates.

5. CONCLUSIONS

We have described use of a large-scale policy analysis project in a central rather than peripheral role in a graduate-level core course on policy analysis. There are several pitfalls in running such a project, and in retrospect we see important ways to streamline the activity while fulfilling the same learning objectives. In our enthusiasm to capture as far as possible the reality of a policy investigation, we left students with many open choices that they gradually formulated and negotiated, but only after a large investment of time in group discussions. Many students reported diversion away from other courses and from preparing for this course's examination. Some streamlining of the project is needed to keep it consistent with the time slot available, since it is part of one course run at the same time as students take one or usually two others rather than a self-contained short course. Indeed, one of the main reasons proffered to explain why coaching-type teaching is not more widespread is that it requires a considerable time commitment on the part of the instructors, and we can confirm this claim (O'Hare, 2008).

We would need also to establish a better balance between group work and individual work, to ensure some report sections have only one author (some

students chose to coauthor sections and receive a joint grade) and to assign sections or approve an allocation of sections that ensures a required minimum and maximum load per person. The most popular type of assignment that we traditionally used—writing a structured policy options paper on a topic selected by the student but requiring approval by the instructor—no doubt eliminated free-riding, but free-riding in the PAP was at least reduced when compared to the shorter case-study workshops we previously conducted.

We also need to improve assessment methods. Lipsey (2008) points out that coaching-type pedagogy has an apparent uncertainty of outcome because testing for student achievement cannot be specified in the same way that tests and problem sets assess student achievement in traditional teaching formats. We can confirm some of the concerns expressed by Lipsey. One could remark that this is more reflective of real-world situations where individuals' "assessments" are strongly conditioned by the performance of their group, but this argument will not suffice in the academic sphere. Our new design, which assesses students for their individual contribution to a group report, very likely makes individual failures rarer. Further, the quality of the strongest work done in pure individual essay format was higher than that done in group format. On the other hand, the quality of work by the poorer participants was clearly pulled up, and they and the middle students are intensively exposed to the work of their most able colleagues. Conversely, the most talented students gain from the more intensive exposure to the inputs and often considerable experience and insight of their less academically talented fellows.

At the same time, we saw significant learning gains. By its nature, policy studies is an integrative field that requires students and practitioners to develop a breadth of mind and understanding, awareness, and appreciation of other people's ideas and ways of thinking in other fields. Policy studies require persons trained in one discipline to have the ability to synthesize and apply the insights of related fields and to think expansively, drawing on more than just narrow disciplinary knowledge to address problems. They put a premium on skills of research, critical thinking, information processing, sense making, and judgment. The PAP, complemented by traditional classroom lectures, facilitated a deeper immersion in the practice of techniques of policy analysis, which in turn helped develop the desired policy analysis skills. We found students progressed in terms of maturity, sensibility, and creativity, as well as being more systematic in their thinking and more independent in their reasoning, in the end turning less to the instructors to "tell" them what the right answer is. Table 2 summarizes our findings related to using the PAP, following De Bono's (1995) Plus-Minus-Interesting format (PMI; see, e.g., Portmann & Easterbrook, 1992). In addition to its pluses and minuses, we include a number of more ambiguous features under the "Interesting" column.

Table 2.
PMI Table of Restructured Policy Analysis Course Incorporating PAP

Plus	Minus	Interesting
1. Promotes analytic reasoning and debate skills.	1. Requires increased time commitments for instructors and students.	1. Simulates real-world work conditions in terms of time pressures, working in teams, and satisficing: reveals both the joys and sorrows of policy analysis.
2. Promotes independent thinking.	2. Increased time commitments and teamwork requirements sometimes create stressful situations for students.	
3. Promotes collaborative work skills.		
4. Promotes research skills.		
5. Allows fairly in-depth exposure to substantive (e.g., environmental) issues within a core graduate policy curriculum course.	3. Creates more difficulties in individual performance assessment.	2. Generates "creative confusion."
6. Motivates self-directed learning as an attitude and as a skill.	4. Allows some free-riding.	
7. Explicitly addresses value issues.		
8. Balances theory with coaching; promotes linkages between the two strands.		

CONCLUSION

In concluding, we believe that by having sustained group work on specific policy topics, we got for most students a better payoff in terms of broad learning about generic themes in policy analysis than we have traditionally obtained by concentrating on the generic themes and having a series of far less integrated workshops and then a separate, purely individual assignment. We got a larger group of students to think more deeply about environmental policy and its implications for development than we could have by offering a specialized but elective environmental policy course. We exposed students to a substantial depth in environmental issues, but we did not attempt to impart encyclopedic knowledge about the field—which is, like many others, simply too large, too sprawling, and too complex for nonprofessionals to quickly grasp. Instead, we focused on developing skills in the broader analytic and argumentative techniques in policy analysis that will enable students to develop the competencies to contribute more thoughtfully, effectively, and equitably in policy processes. We tried to minimize the forgone benefits of not imparting encyclopedic knowledge by stressing that students develop search skills that, in an Internet age, will allow them to rapidly access and evaluate relevant information. In doing so, we taught process more than content. For a core course in a Public Policy and Management specialization, this approach served us fairly well in developing the core skills described in Section 2 of this article. We found too that with this balance there was no resentment among students over our choice to expose them to environmental policy issues throughout the 12 weeks of the course.

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APPENDIX
Illustration of the Hambrick Format

STAGE 1: Cause-Effect

CAUSAL PROPOSITIONS

If government ensures sustainable management of forest resources, the rate of deforestation will decrease.

INSTRUMENTAL PROPOSITIONS

C1 Systematic management will ensure better monitoring and control over forest covers and losses.

C2.1 Coherent national legal framework for forest protection will require economic activities in forests to be environmentally and socially responsible.

C2.2 Increased environmental control will ensure supervision and prevention of illegal deforestation practices.

C3.1 Strengthened capacity of institutions will allow for improved sectoral governance.

C3.2 Decrease in antagonistic policy and institutional interplay in different sectors will lead to improved implementation practices.

C4.1 Institutionalization of participatory planning and public deliberation practices, along with awareness-raising will foster compromise and creative solutions to conflicts over resources.

C4.2 Renegotiation of concessions to the private sector will help mitigate negative effects of economic activities and generate a fair share of public revenue.

GROUNDING PROPOSITIONS

Government failures allow preventable deforestation to happen.

Deforestation poses a threat to functioning of ecosytems and well-being of future generations due to its negative effect on physical and social environment.

Sustainable management of forest resources will balance indefinite needs for forest outputs with the preservation of the critical level of forest vitality and stability.

Actions ⟶ *Impact*

If sustainable forest management practices are introduced, along with the proposed policy measures, the rate of deforestation will decrease.

STAGE 2: Means-Ends

NORMATIVE PROPOSITIONS

Current and future generations have a right to access to essential resources.

Current and future generations have a right to live in safe environment and enjoy their cultural adobe.

Government has a responsibility to ensure well-being and satisfaction of human rights of its people.

Sustainability and participatory planning should be a priority in government's forestry policies.

Action ⟶ *Valued Impacts*

If sustainable forest management practices are introduced, along with the proposed policy measures, current and future generations will be able to lead healthy and productive life in harmony with nature.

STAGE 3: Tests

CONSTRAINTS PROPOSITIONS

Sustainable management of forest resources and strengthened environmental control would have budgetary and human constraints.

Economic recession may limit government expenditure for sustainable environment.

government might lack political will to prioritize sustainable forestry practices.

TIME-PLACE PROPOSITIONS

Recent *WWF report* shows that unsustainable exploitation of the Amazon's forest resources is a major cause of deforestation (WWF Netherlands 2009).

GEO Amazonia report demonstrates the avoidance of worst outcomes from forest loss and ecosystem destruction in Amazon area countries can be ensured only in case of urgent government action (UNEP 2009).

COMPARATIVE PROPOSITIONS

Market-based regulation is not in line with the principles of sustainable development and would lead to rapid forest depletion and environmental degradation.

Market-based regulation is profit-driven and would not guarantee well-being and satisfaction of human rights of all citizens.

A system of incentives will have to be created for stakeholders to comply with the proposed policy measures.

Cross-sectoral approach to changes in land use policy, coherent with the proposed policy measures, will have to be adopted.

EXTERNAL IMPACT PROPOSITIONS

Requirements of sustainability may impose limits on the scale of short-term economic growth.

Strict forestry regulations may discourage investment of foreign capital.

The proposed measures will cause diversion of resources from other sectors.

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Compliance with international environmental accords may help the government raise funds for sectoral development.

Government may receive payment for eco-services provided by the rainforest.

Social conflicts in communities, between stakeholders and with government may reduce in the long term.

Public andcorporate culture based on social responsibility and legal compliance will be promoted in the country.

Systematic and transparent policymaking in the sector may attract foreign direct investment.

Policy Action Proposal

Sustainable management of forest resources should be introduced by the government.

Coherent legal framework for forest protection should be created.
Environmental control should also be increased.
Capacity of governmental institutions involved with the forestry sector should be strengthened.
Intra-governmental coordination and policy adaptation should be ensured.
Participatory planning should be institutionalized, and environmental awareness promoted.
Concession contracts should be renegotiated.

If such policies are implemented, the rate of deforestation will decrease.

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