Active Learning and Simulation in a Self-organizing International Relations Course with Feedback:
a Pedagogical Breakthrough Enabling Coherent Communication in Multicultural, Multilevel and Multivalue
Environments[1]

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Abstract

Three interwoven streams of pedagogy and methodology are discussed as applied to the teaching of international relations in a multicultural environment: (1) Deming's "theory of profound knowledge," (2) Hughes' International Futures simulation (IFs) of the global political economy and international conflict, and Saaty's "analytic hierarchy process" for coherent decision making. The problems addressed include the teaching of critical thinking, appreciation of a systems perspective, and concepts of decisionmaking and value change. Key findings from twelve years of following a process of "continuous improvement" are put in the form of some controversial perspectives pertaining to: the optimal number of students in a classroom (80 or more!), the classroom as a locus for the continuous improvement of a student culture for learning (intergenerational learning across time in a classroom!), and the unresolved dilemma of addressing long term environmental problems given short term political orientations prevalent in international relations despite globalization.

Preface

Educating students into the theory and practice of international relations has grown ever more complicated in the last century, and continues to do so as real world complex interdependencies have continued to evolve. Pedagogy must adjust to address that complexity or leave vast areas of international relations scarcely touched. I have aimed at a solution to that "problem complex" or *problematique* that requires proactive student involvement and sustained effort, aimed at communicating the significance of trends in globalization. It also requires that students shift perspectives from the personal and social with which they are familiar, to larger scale, regional and multicultural levels. It also requires that students expand their cognitive timeframe in order to comprehend the multiple meanings of global trends and change in system structures through which they are now living.

This is not easy. Textbooks have grown to capture these phenomena but the standard textbook structure (large, trying to cover the field, and increasingly organized for cursory reading rather than in-depth study) implies a paradigm for education that I have found increasingly problematic. The instructor's role is still assumed to be that primarily of lecturer covering material along with students reading assignments. Manuals for instructors frequently accompany the texts and clearly imply in their contents that the instructor's job is to cover material represented by the prescribed quizzes, and that ability to remember their content is the students' *prima fascia* evidence for having learned the material.

The problems I encounter with this paradigm can be boiled down to two: bored students and poor learning. This essay reports my progress towards relieving boredom and improving learning in the classroom situation, for teacher and students alike, when studying international relations at an introductory level in college.

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Introduction

My initiation into serious, self-reflective pedagogical concerns did not begin until I had been teaching international relations at the university level for about 20 years. When I was a graduate student, the focus was on content, not delivery. Discourse was framed around substance; it was expected that the rate at which students would learn about the theory and practice of international relations was primarily a function of their natural ability, their curiosity about the subject matter, their past training in the field and study habits. The teacher was responsible for organizing the substantive material (lectures, readings, and assignments), for assessment of the quality and quantity of learning taking place, and for the occasional recommendation to help students find jobs or move into advanced degree programs. Up until 1990, this was my not particularly self reflective pedagogy. To be a good teacher meant to be a good lecturer (fill 50 minutes with well thought out, logically presented theory and history of international relations), a fair grader (testing via exams and evaluating essays), and helping with references for jobs or other forms of advancement.

In 1990, I took a four day seminar from W. Edwards Deming on business management and a one day seminar for educators by his protégé David Langford.[2] My purpose was certainly not pedagogical. I knew Deming's reputation via one of my doctoral students who was well acquainted with Deming personally (Richard S. Conger). By reputation I knew Deming as a quality control and productivity expert who had a significant impact on the USA's ability to mass produce war materials just prior to and during World War II and who at then Governor MacArthur of Japan's request, went to Japan to assist Japanese industry to mass produce better quality products.[3] The effect was startling. In just a few years, Deming's introduction of quality control techniques such as Shewhart charts and humanist management practices consistent with Maslow's social psychology[4] My objective was to learn just what the theory was behind Deming's practices and general approach because of its potential impact on the form and function of what is now called "globalization." Did Deming's philosophy and practice really provide the bridge between traditional mass production organization and ethics on the one hand, and modern, globally interdependent corporate and governance structures? And, did Deming's framework offer a normative system of ethics that might contribute significantly to, if not be the core of, an emergent transcultural, global system of ethics in what Morton Kaplan (1975) once referred to as a "universal system." These were my questions, not how to improve my classroom pedagogically.

It was not until the last day of the seminar, when the focus turned towards applying Deming's theory of "profound knowledge" to educational systems that it began to hit me that my own pedagogy was fundamentally flawed. To be a good lecturer, fair grader, and career assistor, was not enough; as a collection of objectives, they were not central to a key pedagogical question. That question is this: are students increasingly improving their average educational attainment, and is the variation in that attainment narrowing? As long as one thinks in terms of lectures and grades and advancement, one is not thinking about classroom structure as a system. The pedagogical model I had implicitly operated from assumed that variation in performance was a function of the average characteristics of the students coming into the classroom. As long as the quality of lectures and assessment were good, the only source of significant variation would be in student characteristics (curiosity, talent, past education, and study habits). If these did not vary much, students average grades and variation in those grades would change much over the years I taught. The only thing I could do was keep my lectures current regarding theory in the field and contemporary history.

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[2] References to Deming and Langford are from Deming (1986, 1991) and Langford (1995). The material covered in the 1990 seminar included much of the 1991 and 1995 text material in draft form.

[3] At the time Japan was in a depression, corporations fired workers, and was experiencing large scale, violent, worker strikes. Toyota was known for instance, for shoddy autos and was on the verge of bankruptcy. Probably because of Mao's takeover in China and the rise of Soviet nuclear threat and continued military presence in eastern Europe, we came to want to rehabilitate Japan economically and ally it with us against the looming Communist threat.

[4] See Maslow (1998). I do not know whether Deming was influenced by Maslow or vice versa.

If the classroom is viewed as a system, on the other hand, a different paradigm emerges. Envision the students with the aforementioned characteristics on the one hand, and the substantive material on international relations on the other hand. The question arises, what barriers are being set up in the classroom environment (the conduct of the class, the assignments and so on) that prevent students from acquiring that knowledge? The focus now is on how classroom time is used, how well in-class conduct is integrated with work assigned outside the classroom, and so on. What was assumed to be constant now becomes variable, and such variability can reasonably be expected to result in a change in outcomes, in learning.

It was with this idea that I embarked on a ten year effort to locate and remove, to the extent I found possible, practices in the classroom that acted in varying degrees as barriers preventing students from acquiring the knowledge I hoped they would acquire through the readings and lectures and related assignments.

Deming's theory--at least the core aspect from my perspective--can be summed up in two assumptions, *dicta* if you will. We all live in social systems which determine our average behavior. In those systems, people are naturally inclined to cooperate for their mutual good. It follows from these assumptions that you can separate out two general types of causal factors influencing outcomes, those characteristic of the system, producing what he termed common variation, and those exogenous to the system, producing what he called special variation. Students abilities, initial motivation and training might produce special variation, but the system, the classroom if you will, would produce common variation. Deming believed that roughly 90% of variation in social behavior was system generated.

The rest of this essay is about several innovations I have found seem to work well in my particular environment and given my particular personality. I do not claim that these innovations are likely to have the same effect on your classrooms as they have had on mine, because my personality interacts with those innovations, as do my students' backgrounds and talents.[5] The important paradigmatic shift has already been described above. It is that shift that caused me to envision the classroom in a fundamentally different light. The innovations that followed, followed because of that change in my own perspective on my responsibilities to students in the classroom situation.

I have also recently become aware of one of the underlying reasons why I have experienced some degree of success in improving the quality, and quantity (number of students in the classroom). McEwan (2005) reported on some research she recently conducted related to learning modalities (auditory learning (as with lectures), visual learning (as with graphs on chalkboards, pictures, etc.), and kinesthetic learning (small muscle use such as writing and speaking; large muscle use as in walking). She found that a mix of all three modalities had the largest effect on students' performance on assessment measures, and that students individually had preferences for one or the other specific modalities. In the use of simulation exercises below, all three modalities are present; so it may be the availability and use of diverse modalities that is important, as well as the substance of the simulation content *per se*.

Radical reduction in Lecturing

The first innovation that brought some degree of success was cutting back my lectures to 10-15 minute segments interspersed with student discussion.

It turns out that precisely how student discussion is organized is extremely important. Some students tend to be much more passive, some naturally take the initiative in conversation. Some are more people

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[5] This orientation towards specific innovations is in marked contrast to the "cookie cutter" mentality about which Parker and Slaughter (1994) rightly complained with regard to the TQM movement in its higher learning institutions' manifestation.

oriented, some much more task oriented.[6] By randomly assigning students to short-lived discussion groups at the beginning of the semester, and randomly selecting one person in each group to be the group reporter, then having dialog with each reporter about the group's reaction to a 10-15 minute lecturette, a structure is created that remains focused on the course material while giving each person the opportunity to participate. As each group is randomly formed, the one selected at random to be the reporter is given the responsibility of organizing the initial conversation. The process is this: first a minute or two of silence for students to compose questions, second each the reporter has each student introduce themselves with their first name and a brief statement about the question or other reaction they had to the lecturette, third a general discussion ensues. Each group is about 6-7 students and they are given about 10 minutes to interact. The reporter then stands up, gives their first name, and summarizes key points or questions to the class as a whole. I then take notes and after they have all made their statements (or sometimes in dialog with each reporter) discuss my reactions to their reactions. I then go on to the next lecturette, new groups are formed at random (they actually are given numbers to join different groups) and the process is repeated.

After a few weeks of this process, students have met each other and formed opinions about what they would like to do for their projects and with whom. This leads into the simulation phase.

The Use of Teaching Interns: Multigenerational Feedback in a Self-organizing System

A few years after I began to think of my classroom as a system in need of continuous improvement with the aim of advancing my students' achievement (mastery of the international relations theory and historical content), one of my students (now a professor at the Asia Pacific Center for Security Studies) asked me if he could have the opportunity of interning with me, to help me teach the class (we have a course, "Teaching Political Science," that offers such a relationship with faculty). I had never had a teaching intern, but the possibility that he could relate better to the students than I, or at least some of them, was enough for me to accept his offer. In time, I developed a program for such teaching interns which follows this regimen:

- An intern must have taken my international relations class because I did not want the addition burden of educating them in the very subject matter with which they would work.
- Intern helps prepare, administer and grade quizzes and exams, evaluates student participation in the simulation (described in the next section), helps evaluate essays, and makes at least one class presentation of one of the lectures I would normally do.
- At the end of the semester, interns write a "Dear Intern" essay to the next generation of interns, offering the results of their learning experience to the next generation of interns.

This last point, only implemented in the last five or so years, has had a major consequence. The effect appears to be cumulative. Each generation of interns learns vicariously from the experiences of the previous generation, and offers many small changes that add up to a major change in students' attitudes towards the classroom. In deciding to implement recommendations, I elicit the new interns' viewpoints-- do they agree with the previous group?--but in the end I take responsibility for which implement and which not. Increasingly, I find myself behind the curve as it were. The rate of change appears to be primarily a function of my ability to adapt to the changing environment! Increasingly, my job has become to continually adjust to pedagogical recommendations from my students.

Simulation

One of the key problems in teaching is to adjust the content of my lectures and the exposure of students to the dynamic, ever changing nature of "globalized" international relations.[7] Both because of the great

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[6] I want to thank Leo Bogee, a leadership seminar educator, for introducing me to the active-passive, task-people oriented framework.

[7] As a first step, our department has at least nominally acknowledge the need for change in our profession by putting comparative politics and international relations under one rubric: global politics. However, it has a long way to go in adjusting the curriculum.

diversity of students in Hawaii (ethnically, racially, religiously, nationally and so on) a multilevel, multicultural, multivalue approach to the study of international relations is vital. Quincy Wright (1955) foresaw this eventuality first; his text documents how international studies are composed of more than twenty disciplines ranging from psychology and environmental studies, to economics and systems dynamics. To at least try to do justice to this complexity at an introductory level, over the years I have introduced three distinct educational modules into the classroom:

- A personal leadership module introduces students to leadership study at a personal level, an applied level, and a theoretical level. I invite a leadership training expert into my classroom for two sessions. He provides some kinesthetic and auditory exercises (eye contact and listening in dyads), a Jungian framework for understanding differences in leadership styles and discusses the crucial significance of the concept of self-worth (vs. self-esteem) in their decisionmaking.[8] The importance of this cannot be overestimated. Usually students respond very strongly to these exercises, get engaged, and are prepared thereby to take their communication with each other in the subsequent simulation seriously, adopting a leadership perspective that otherwise would not have been possible.
- A formal decisionmaking model is introduced and employed at its more elemental level. Designed by Thomas Saaty (2001)[9] it has been used extensively in small group contexts by my students to simulate foreign policy decisionmaking. Those with an interest in learning advanced decision making techniques have the model available to them on our social science lab computers, and the teaching interns use it to provide structured feedback to the students about their decisions. The basic logic is taught through lectures and applied by students to formalize and share their first decision exercise. This model (a structure for formalizing subjective judgments consisting of goals, alternatives, criteria, priorities and significance estimates) has proven useful for students to explicate their own values, attitudes and situational orientations to one another, in a form that emphasizes respect for one another's viewpoints.
- A contingency planning and "forecasting" tool is introduced; it is a computer simulation of global economic, political, social, and environmental trends using countries as the unit of analysis. Regularly revised and updated over the last thirty years by Barry Hughes, it is employed by the students with the assistance of the teaching interns, to examine the long term implications of their individual and collective decisions for national and global trends.[10] Hughes' International Futures (IFs) model includes a data base of several hundred variables mapping more than 120 countries in their economic, environmental (including agricultural, water and energy resources) and domestic political and international systems.   The teaching interns run the model to assess possible effects on global and national trends brought that might be brought about by policy changes students think about making.

These three modules work synergistically. After the students have experienced Bogee's leadership exercises and lectures, they are introduced to a classroom simulation that consists of a an elaborate preparation for simulating foreign policy, the actual role playing of national leadership groups, and a period of debriefing. Throughout the simulation, which takes about two of the three months the class is in session, weekly sessions are divided into brief lectures and discussions, then simulation time (about half time devoted to each). At the end of the week, students are given quizzes or exams (12 quizzes and 4 exams over the course of the semester) which deal with the readings and lecture material. Let us now look at each phase of the simulation activity.

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[8] Leo Bogee's lecture notes have kindly been made available to my students on some of my webpages, the entry point of which is http://www.hawaii.edu/intlrel/LTPA/ltpa.htm.
[9] An earlier version of Saaty's decision analysis technique, known as the "analytic hierarchy process," was programmed and distributed through Expert Choice Inc; see http://www.expertchoice.com/. A site license from them has enabled most of my students to have access to the model on our campus computer lab for social sciences. The newest development, known as the analytic network process (Saaty, 2001) is available for beta testing free of charge at http://www.superdecisions.com/, and the general philosophy and other specific tools for decision making are available at http://www.creativedecisions.net/.
[10] Hughes (1999). His model, International Futures (IFs) is available for downloading free of charge through his website at http://www.du.edu/~bhughes/ifswelcome.html. IFs has benefited greatly by the pioneering work of the Meadows (1972), Mesarovic (1974), Bremer's Globus Project (1987)

Students are prepared for the simulation by general discussion of what will take place and a series of lectures dealing with the fundamental concepts of power, security, and economic and technological development. Lasswell's value checklist (wealth, respect, affection, power, skill, well-being, enlightenment, and rectitude) (Lasswell and Kaplan, 1950), and Maslow's hierarchy of needs (physiological, safety, belonging, self-respect and self-actualization) (Maslow, 1954) are both discussed and adapted to the international relations setting. For instance, at the national decisionmaking level, Maslow's hierarchy is related to common values such as national survival, security, identity, diplomacy and national interest or vision for the country). Lasswell's eight core values are related to change in the level and distribution of wealth (GDP/capita), diplomatic orientation (respect), policy-related public opinion (affection), power (military indicators), skill (technology transfer issues), well-being (health issues such as child nutrition and AIDS), enlightenment (literacy and international education), and rectitude (perceptions of moral character of leaders and causes). By introducing these generic or core values and basic human needs, students come to relate their particular heritage to the global political arena in a way that is at once culturally sensitive yet not culturally unique.

The simulation develops as follows.

1. Students are divided up at random into groups of 6-8 and assigned countries to represent in the simulation. Each student is assigned a particular role. For the sake of initial uniformity in explaining the simulation, fictitious titles are assigned: chief executive officer (CEO), chief intelligence officer (CIO), chief military officer CMO), chief trade officer (CTO), chief foreign officer (CFO), chief support (opposition) officer (CSO), and others as needed). Each student
   - finds 10 or more sources of information relevant to their country and role, and displays the list on a webpage,
   - extracts from the above sources a page or two of key information about their country's characteristics, policies, and recent history; this is also placed on the web;
   - develops a policy statement or "white paper" describing their situation as best they understand it, including a preliminary statement about their foreign policies; this also is placed on the web.
   - Write a "dear diary" essay to me as their instructor, discussing the various problems and opportunities they had in the above process, and doing a self-assessment of what they have learned through these exercises to date.

   By doing this students not only become acquainted with their country and its foreign policy issues, but also have an opportunity to study each other's thinking and so form the basis for future dialogs. Teaching Interns (TIs) play a role in this phase. The TIs have participated as students in a previous class so are quite familiar with the process. Thus they serve as consultants and coaches--one TI per team--giving student training in web searching and webpage development as needed.
2. The TIs use Saaty's decision logic as a format for prompting students to formulate their first policies, assessing their country's significant issues in terms of Maslow's hierarchy and Lasswell's value checklist, indicating where they currently stand relative to their goal(s), and the extent to which their international political environment is friendly and supportive of their goals (or obstructive and hostile towards them). A decision form is filled out; the TIs then use this to construct a decision tree, currently with Expert Choice. The result is presented to them.
3. Once students are prepared in this manner, the simulation begins. About half of each class session on average is devoted to students negotiating with each other in three different formats:
   - Dyadic relations with students milling about the classroom discussing their issues and trying where desired to solicit cooperation.
   - Generic "CEO" summits in which the simulated heads of state get together to share views and politic. This is usually accompanied with corresponding CIO meetings to share intelligence, CMO meetings to share military concerns, CFOs for UN-like meetings and related, and so on.
   - Classroom presentations when students wish to do something like a global press release announcing some change in policy to the simulated world, followed by more simulated activities.

Mid-course Evaluations and Teaching Interns as Sources of Feedback to Improve Quality

About midway through the course I often take advantage of our Center for Teaching Excellence in our university to conduct a midterm evaluation, to assess students' reaction to the exercise and the class as a whole. I use it as a "distant early warning" about problems that may be emerging and what I can do about them.[11] This has proven extremely valuable. Everyone makes mistakes about such things as the quantity (amount of work in terms of student labor hours) and quality of assignments (clarity, relevance, and so on). New innovations in process may or may not work as intended. The very act of conducting such an evaluation has meaning for students. As one TI told me, "I think you really care about whether students learn!" That in itself is a message worthwhile communicating.

More broadly, consider Easton's model of politics (Easton, 1957, 1971) illustrates the feedback process in the classroom as well as it does politics in general as a control system. Demands (students' need for respect and education) and supports (students' willingness to attend class and do work) are the inputs, my decision making sets policy, and the impact of that policy feeds back to changes in demands and supports (what Easton referred to as the "political environment" was the feedback loop). How can a faculty member tell what the impact is, in any detail, of the various innovations (assignments, exercises, substantive details) if there is no opportunity for feedback other than exams and term papers? How can you fine tune the system with only limited occasions for feedback?

Because of such considerations, I regularly meet, usually weekly, with my TIs to listen to them about how students are reacting to the classroom--the assignments, lectures, exercises and so on. Emerging problems as well as successes are discussed. I adjust when I believe a good case is being made to make a change in how class time is being used in order to improve learning.

Some Partial Statistical Results

Over the years perhaps the most important observations I've made are for me, personal and anecdotal. Embarking on Deming's route for education has been extremely rewarding in terms of student feedback. Beyond that, I've notes several statistics which may be significant. One is the trend in numbers of students registering for the international relations class. In Table 1 below, it is pretty obvious what happened. My class enrollments for the 1980s varied between 31-48, usually well below the maxima. After a sabbatical, for a few years the pattern seemed to be the same, perhaps a bit lower with 21-47 students. When I began implementing some of the above changes and anticipating a larger class, the numbers did not vary much (42-47). With the introduction of first one TI, it seemed that I got a huge response with enrollment jumping from 47 to 59, to 76 and 85, then peaking at 93 (the absence of a TI in 1993 was an anomaly; the student was registered for a different course number).

I attribute the decline in 1995 and 1996 to the auditorium style classroom I was using. As the simulation exercises and related group work grew, the auditorium structure itself had a depressing effect on me as well as my students. The acoustics were terrible, the students were uncomfortable both sitting and standing, and walkways were cramped. I even had them leave the building occasionally to hold discussion outside.

Note that after my sabbatical and not teaching the class for two years the same pattern reappeared. When I gradually got more TIs the numbers went up. This time, in the late '90s and early '00s, I experimented with a variety of classrooms on campus, and finally moved into the largest classroom with movable chairs on campus. The acoustics were excellent, the students could form circles for discussion groups, and I had plenty of TIs. The system seems to have stabilized.

The one thing I have not yet done is a statistical analysis on my students' grades! It did not occur to me to actually collect these statistics as I innovated, but the raw data are available in our administrative offices and in some of my personal records. Just to report something quantitative to buttress my subject

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[11] See the CTE website at http://www.cte.hawaii.edu/; the first link, "Teaching Assessment Services," describes the details of their service.

impressions, Table 2 shows my grade distributions. I believe that they were not always so. I have the distinct impression that they have improved markedly. This may not be true. In the near future I will collect and analyze the data.

Table: Student enrollment in the international relations class I teach.

Year	Semester	enrollment	Maximum	Tis	Comment
1986	Spring	32	35		prior to Deming
1986	Fall				
1987	Spring	48	55		
1987	Fall	34	37		
1988	Spring	45	55		
1988	Fall	31	33		
1989	Spring	31	35		
1989	Fall				Sabbatical
1990	Spring				
1990	Fall	24	33		
1991	Spring	21	20		
1991	Fall	26	35		
1992	Spring	42	40		Experiment with enlarging class size
1992	Fall	47	70		
1993	Spring	59	90	1	auditorium style classrooms with Internet capability, campus wide enrollment declines
1993	Fall	76	110		
1994	Spring	85	110	11	
1994	Fall	93	110	12	
1995	Spring	80	110	9	
1995	Fall	63	110	4	
1996	Spring	58	110	4	
1996	Fall	66	110	5	
1997	Spring				Sabbatical
1997	Fall				Teaching other classes
1998	Spring				
1998	Fall	25	50	0	increasing number of teaching interns to coach students in simulation
1999	Spring	33	60	4	
1999	Fall	50	56	4	
2000	Spring	42	70	5	
2000	Fall	58	60	8	
2001	Spring	38	70	8	
2001	Fall	64	70	12	
2002	Spring	59	80	12	moveable chairs plus Internet plus good acoustics
2002	Fall	80	80	12	
2003	Spring	77	80	10	
2003	Fall	84	80	13	
2004	Spring	78	80	11	

Table 2. Grade distributions last school year*

A	B	C	D	F
47	30	5	1	1
39	30	6	1	2

* A >= 90%, B >=80%, C >=70%, D >=60%, F <60%, based on 12 quizzes, 4 exams and two essays.

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