

**Engaging Students in the Study of Global Environmental Change through
an Experiential Learning Approach**

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INTRODUCTION

Teaching undergraduate courses in the field of international environmental studies or “global environmental change”¹ can be an incredibly rewarding experience but it can also be a very challenging endeavor. Those of us who teach or who serve as academic administrators in this field face a wide variety of challenges in our efforts to deliver the best educational experience possible to our students. The organizers of the Berlin Conference on Global Environmental Change noted that two of our key challenges as educators in this field are (a) to pave the ground for “communication between academia and non-university experts and practitioners from the state, industry and non-governmental organizations” and (b) to develop “new forms of systematic interdisciplinary cooperation.” In addition to these challenges, I would add that we as educators also face the major challenges of linking students to work experience and job opportunities and even more importantly that we must do our best to personally engage and empower students. Thus, a simplified list of key challenges that I see for educators in this field are the following:

- connecting the academic setting with practitioners (and other stakeholders)
- strengthening interdisciplinary curricula
- linking students to work experience and job opportunities
- engaging and empowering students

The primary argument of this paper is that a combination of less traditional educational approaches, such as field-based coursework, guest speakers, off-campus organizational visits, internships, and the like, should complement the traditional lecture-centric educational approach at the undergraduate level in order to best meet the four key challenges listed above.

This paper begins by examining the common goals of undergraduate education within the broad categories of academic, professional and personal goals. The second section of this paper opens up a discussion on less traditional educational approaches sometimes used at the undergraduate level. These approaches – including elements such as field-based coursework, guest speakers, internships, site visits, and the like – generally fall into the category of “experiential learning.” To show how these different elements or educational approaches can be pieced together, the following section provides an overview of an experiential course on International Environment and Development that I direct and teach within the Washington Semester Program at American University in Washington, DC. The concluding sections of the paper discusses how these experiential approaches help overcome some of the limitations of a purely lecture-centric approaches to education and what can be done to help incorporate such approaches into existing programs.

Ultimately, I do not seek to offer a blueprint for other programs of study, but instead to help shed light on experiential education and the advantages it can offer as seen through my own

¹ For the purpose of this paper, the study of “global environmental change” includes a broad spectrum of issues connected to international environmental change, including elements of policy, science, politics, economics, community development, and other related areas of study. The phrase “global environmental change” is used in this paper since it is the official theme of the Berlin 2004 Conference.

experiences and through the experiences of others so that educators can better understand how these approaches can work, what they can accomplish, and what challenges accompany them.

COMMON GOALS OF UNDERGRADUATE EDUCATION

In discussions of how to improve educational approaches to the study of global environmental change at the undergraduate level, one immediately confronts the most basic question of what are the goals of education at the undergraduate level. Depending on the individual student or professor or on the specific educational institution, one will find a wide variety of responses to the question. This paper assumes that there is a broad spectrum of goals behind undergraduate education in field of global environmental change. One way of looking at the goals of education at the undergraduate level is by breaking the goals down into three broad categories: traditional academic goals, professional goals (preparing students for jobs and careers), and personal goals (e.g., fostering a deeper connection between students and the course material they are studying). The four *challenges* mentioned at the outset of this paper mirror these three broad categories of *goals*, although the first two challenges (linking with practitioners and fostering a stronger interdisciplinary approach) fall under the broader category of “academic goals.”

Among the more traditional academic goals, undergraduate educational programs aim to build knowledge and strengthen skills among students in their respective fields. For an interdisciplinary area of study such as global environmental change, the knowledge goals include knowledge of the issues, actors, science, politics, policy, theory, and practice, and the many linkages across these areas of study. For many, this area of study also presents the challenge of examining similar issues at different levels of analysis, from the global to the local, and exploring the linkages as well as the disconnects between the different levels. Beyond building knowledge, undergraduate institutions also focus on building critical thinking skills; research and writing skills; verbal skills; technical skills applicable to the field; and creativity and innovation in analysis and problem solving.

While most educators and students would accept the above list of academic goals as core to any educational experience, most of these stakeholders in education would also agree that an undergraduate degree should directly contribute toward assisting students in locating and securing a job in their field of study (DiConti 2004). Thus, the goals of education could also include professional or career related goals such as preparing students for their a career in the field; educating students about possible fields of work, potential places of employment, and specific skills sought by potential employers; connecting students with practitioners and other stakeholders in their areas of concentration; and, in some cases, providing students with real world experiences through internships.

Educators and educational institutions are likely to keep their focus on the academic and professional sets of goals above, but some educators are likely to incorporate less traditional, more personal, goals that can be and often are achieved through undergraduate educational programs. In the field of global environmental change, many professors in this field seek to inspire students, to raise awareness among students about the problems and their severity, and the need to do something about these problems (Maniates 2002; Hempel 2002). Thus, educators in the field of global environmental change often add a list of personal goals for their students.

Such a list might include fostering a sense of personal connection to global environmental change; fostering a sense of responsibility and the need to take action; fostering a sense of self confidence and a sense of empowerment among the students.

Such a comprehensive list of goals goes beyond what some educational institutions or instructors aim to accomplish, but even if the primary focus is on the academic goals, the supplementary goals can deeply impact the level of engagement that students have with their studies and thus can deeply impact their achievement of the more traditional sets of goals (acquiring knowledge, critical thinking skills, etc.). Research already supports these observations (Kuzmic 2000; Fritschner 2000; Quay 2003), but personally witnessing and experiencing the impacts of connecting the material and people with the students and their education has left no doubt in my mind that this is one of the most effective ways to strengthen educational goals in all respects. One of my students articulated these sentiments in a reflection essay assignment (at the end of a semester in the experiential program that I teach):

Just as my experiences in Brazil enabled what I learned in Washington DC to live beyond the page, I want my endeavors back [at my home school] to allow the personal and intellectual growth from this program to live beyond the semester.... I believe that what lies ahead of me is continual intellectual and personal growth in addition to a life that carries with it a dedication to helping others...I know that learning is not about reading the most highly acclaimed books or attending the highest ranked institutions. It is about equipping oneself with the needed preliminary knowledge and then engaging in experiences that bring that knowledge to life (anonymous student, 2003).

The statement above was written a student who became more engaged in the issues that we studied than most students I have, but even those students who are not as easily engaged in the issues or topics under study eventually find some experiences that they can personally connect with and thus apply to their studies. These types of connections and direct student participation, even if only limited in some cases, make a major difference in how much students are applying themselves in the classroom and in how much they are learning. If for only these reasons, educators should actively seek out innovative ways to deepen the personal connection students have with the issues they are studying and thus deepen their commitment and engagement in their fields of study.

A LESS TRADITIONAL EDUCATIONAL APPROACH

Teaching and learning takes place in an incredibly wide variety of forms and in a wide variety of settings. At the university level, especially in undergraduate studies, the traditional approach to teaching has primarily been based on a lecture format, where the professor shares his or her knowledge and insight with the class and offers explanations, clarifications, and insight into what the students were required to read in their texts. Students would of course be evaluated primarily on their ability to absorb the information provided and communicate this information back in the form of responses to exam questions. As one professor notes:

Professors embrace the lecture because of its predictability, efficiency, and familiarity. A Ph.D. armed with a lecture pretty much knows, walking into a classroom, what will transpire that day. The same obtains [sic] for students: though they may complain that lectures are boring or tedious, students embrace the lecture model of instruction for its familiarity, predictability, and efficiency” (Hempel 2002).

Furthermore, the lecture-centric format is generally the most time-efficient approach for professors who have the dual obligation of researching and publishing in their fields.

While a lecture-centric approach to the teaching of global environmental change is often an efficient and well structured way to foster many of the academic, professional and personal goals discussed above, the lecture-centric approach has many real limitations that can be overcome by including less traditional approaches to the undergraduate educational curriculum. Many educators see traditional approaches to undergraduate education as too far removed from the real world and too parochial. In the words of Boyer, “there is a disturbing gap between the college and the larger world. There is...a parochialism that seems to penetrate many higher learning institutions, an intellectual and social isolation that reduces the effectiveness of the college and limits the vision of the students” (1987, p. 7). I do not argue that the traditional lecture and exam format should be abandoned, but that the traditional approach should be complemented by a combination of somewhat less traditional approaches in order to best achieve an effective interdisciplinary education that directly links students and educators to real world people, places, and topics.

Less traditional approaches, most of which can be classified as “experiential learning” approaches, can help any curriculum overcome the many gaps inherent in lecture-centric teaching and learning. The experiential learning approaches discussed below can be particularly effective in meeting the goals of linking the academic to the practice, building a stronger interdisciplinary program, and more fully enriching students’ passion for the issues and their motivation to become deeply engaged in the field. Over the past several decades, non-traditional approaches such as experiential learning has become increasingly popular as a means of education at the undergraduate level and has even become a fairly popular area of research for scholars (Kolb 1984; Cantor 1995; Fenwick 2000; Marlin-Bennett 2002; Kolb and Kolb 2003; Gosen and Washbush 2004). There are of course many varieties and many definitions of experiential learning. According to Kolb, experiential learning is “the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 38). Cantor defines experiential education more simply as “learning activities that engage the learner directly in the phenomena being studied” (Cantor 1995, p. 1).

In the simplest definition, experiential learning is *learning by doing*. From here, one must address what is meant by the word *doing*? In a more strict definition, *doing* implies that the student is actually doing work in the field that he or she is studying. In other words, doing implies that a student is participating in an internship of one kind or another. However, the concept of experiential learning also generally includes the following types of activities: conducting field work, participating in overseas travel courses, service learning, participating in in-class simulations, partnering with outside organizations to carry out work in the field, etc. All

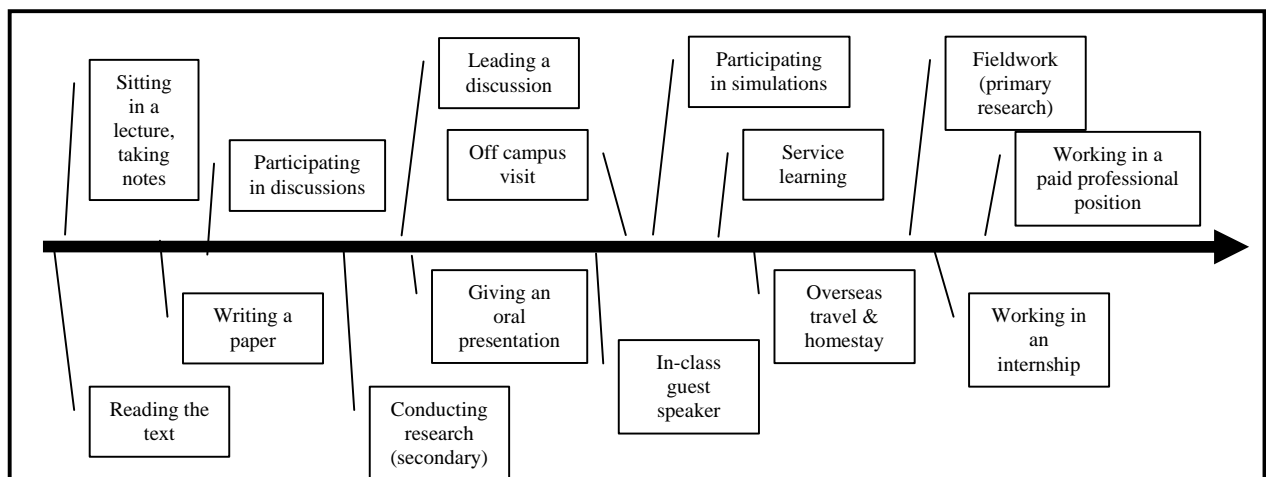
of these activities involve students doing something besides sitting in the classroom or in front of a book or computer.

If one were to take an even looser definition of experiential learning, one could argue that all learning is experiential to some degree because when students are in class, reading texts, and writing papers, etc., they are actually doing something, even though that something is not directly a part of the practitioner's world. A looser definition of experiential learning would also include the following activities, which in reality do involve *learning by doing*:

- writing papers and conducting research projects
- participating in-class interactive lectures
- participating or leading classroom discussions
- participating in simulations, debates, group projects, oral presentations, and similar in-class exercises
- meeting and interacting with guest speakers
- participating in off-campus site visits

Obviously, including the above list of activities blurs the line between experiential learning and the traditional lecture-centric approach. The looser definition of experiential learning would allow one to see *all learning as experiential learning*, though to varying degrees. As such, one could identify a spectrum of ranges of experiential learning. Figure 1 below provides an illustration of how a spectrum of different degrees of experiential learning might fit together.

Figure 1. Sample Spectrum of Experiential Learning



The figure above is by no means intended to represent all forms of experiential learning, but it does represent how a good number of the more common forms might fit across a spectrum of experiential education. As is discussed in the section below, the combination of these different types of experiential learning approaches can be brought together into an effective and integrated educational curriculum at the undergraduate level in the field of global environmental change. The Washington Semester Program at American University is structured specifically to combine

multiple forms of experiential learning and in fact manages to incorporate nearly all of the elements in Figure 1 above.

THE WASHINGTON SEMESTER PROGRAM AND THE INTERNATIONAL ENVIRONMENT AND DEVELOPMENT SEMESTER

For the past four and a half years, I have overseen and taught a one-semester experiential program on “International Environment and Development,” which is part of American University’s Washington Semester Program in Washington, DC. The broader Washington Semester Program (WSP), which started in 1947 and now includes about eleven course offerings (such as American Politics, Foreign Policy, International Business, etc.), is designed as an intensive one semester program for undergraduate students visiting Washington, DC from universities across the U.S. and around the world. The WSP generally enrolls around 500 students each semester in the different course concentrations, with around 25 students per class. Almost of the students are upper level undergraduate students.

Overview of the Washington Semester Program

All courses in the WSP are structured in a similar way: a three-day per week seminar component (worth 8 credits); a two-day per week internship component (4 credits); and an optional semi-independent research project (4 credits). Collectively, these three components constitute a full 16-credit course load for students. The International Environment and Development (IED) course track that I oversee uses the basic WSP approach described above, but it also includes a three-week overseas component to Brazil or South Africa, depending on the semester.² Each group of students will typically only have one professor who oversees the seminar as well as the research project. An additional adjunct faculty member will usually teach the internship classes.

The core idea of the program is to combine multiple forms of educational approaches, all of which are experiential in one form or another, and to directly expose students to the practitioners in their respective fields through the seminar and internship components as well as to provide students with real world working experiences through their internships. The seminar component itself is uniquely structured so that in addition to the usual lecture and discussion sessions, the weekly schedules also involve three to five guest speakers each week, some of which are held on campus while others involve off-campus site visits. The internship component not only requires student to work as an intern two days per week but also requires students to participate in separate class sessions where students reflect on their internship experiences and the knowledge and skills acquired through these experiences. The research component consists of faculty-led classes to guide students in selecting a research topic, developing a research question, finding and accessing information sources, arranging and conducting interviews with policymakers and other experts in the field, and developing analytical approaches to their papers. Each of these components is discussed in further detail below.

Overview of the International Environment and Development Semester

² The only other course in the WSP with an overseas component is the Peace and Conflict Resolution semester, which involves travel to Ireland or to the Balkan region.

The International Environment and Development (IED) semester or the IED program is one of the eleven course offerings in the WSP, but this track combines the seminar in Washington, D.C. with an intensive 3-week Field Practicum in Brazil or South Africa. The Seminar and Field Practicum, conducted in parallel with a two-day-per week Internship component and a Research Project, provide a comprehensive experiential learning program in which students:

- meet and interact with many of the world's leading experts and key decision-makers;
- attend regular class meetings, lectures, and discussions;
- gain invaluable work experience while interning at an international institution;
- participate in a 3-week field trip on environment and development in Brazil; and
- complete a faculty-guided, independent research project (optional).

In the IED semester, students learn about global actors, institutions, and dynamics; national and community-level issues, challenges, and peoples; and the linkages between the global and local levels. The course is broadly divided into three major units:

- Unit 1 focuses on international development issues, including economic and social development, poverty, population growth, basic human needs, the global economic system, foreign aid, debt relief, and the like.
- Unit 2 examines international environmental issues, including global warming, biodiversity, ozone depletion, tropical deforestation, eco-labeling, trade, and more.
- Unit 3 examines national- and community-level environment and development issues, specifically focusing on the Brazil or South Africa experience. This unit includes a three-week field practicum to Brazil or South Africa, depending on the semester.

As is easily seen from the list above, this course is wide ranging in terms of topics covered and in terms of disciplines of study covered as well.

Seminar Component and Guest Speakers

Lectures are not abandoned in the WSP program and, indeed, lectures are critical to shaping the overarching themes of the course, ensuring that core material is covered, elaborating on concepts introduced in the readings, and fielding students' questions among other things. The WSP retains the lecture and discussion components of traditional classrooms, but also structures each week in a way that students will also be meeting with three, four, or sometimes five guest speakers per week. Thus, a weekly schedule for the seminar component is likely to include:

- one lecture by the professor to introduce the week's topic in broad terms, address the themes and organizations to be discussed by the guest speakers, and so on
- three guest speakers (on average) per week
- one class session for debriefing on the speakers and discussion

A sample weekly schedule is provided in Appendix 1. Over the course of a semester (approximately 16 weeks), the students end up meeting with over 50 practitioners in the field. The speakers whom we meet with on a weekly basis either visits the American University

campus in Washington, DC, or the class takes the public transportation to wherever the speaker's office happens to be located. Thus, the format not only emphasizes linking students with specific practitioners and experts but also links students directly with organizations more broadly by giving students physical access to the office of the organization visited. Through such an approach, students gain direct access to some of the world's most influential policymakers, leading non-governmental organizations (NGOs) in the field, multilateral development banks, other inter-governmental organizations, research institutes, think tanks, and similar organizations. Appendix 2 lists a sampling of organizations by category.

Overseas Practicum Component

In the International Environment and Development course, all students participate in a three-week overseas practicum as part of the four-credit seminar component of the program. Currently, the fall semester destination is Brazil (November) and the spring semester destination is South Africa (April). During these three weeks, I travel with the students to different parts of these countries to meet with national and local level NGOs and governmental agencies as well as with community organizations, families and individuals.

The travel itineraries generally include one week in an urban setting and two weeks in a rural setting. While in South Africa, we spend one week in Cape Town, where the focus is on urban community challenges. We spend the other two weeks of the trip in the rural northern part of the country, where the students participate in homestays, visit ecotourism projects, meet with different communities, visit national and regional parks, and more. While in Brazil, we spend one week in Rio de Janeiro, where much of the focus is again on urban social and development challenges in the city's *favelas*. The remaining two weeks of the trip are spent in the Amazon region in the state of Amazonas, where we travel by boat through the jungle, meet with different communities, spend a few nights with scientists at a biological research station, and stay for nearly a week with what some have acknowledged as the only truly community-run ecotourism initiative in the community of Silves in the heart of Brazil's Amazon region.

Internship and Research Project Components

The internship component of the Washington Semester Program involves a two-day per week working internship in any number of Washington, DC's organizations or agencies working on international environmental or development issues. The students are required to secure their own internships, but are assisted in this process by an adjunct faculty member and through access to a comprehensive database of organizations and possible internships, contact information, etc. Typical internships include work at organizations such as the U.S. Environmental Protection Agency, World Wildlife Fund, World Resources Institute, Congressional offices, Center for International Environmental Law, etc. The experience of securing an internship position is part of the learning process itself and helps students better understand the steps they will need to take in job searching in the near future.

As stipulated by a contract signed by the student and his or her internship supervisor, at least 60 percent of the work carried out by the intern should be entry level professional work (and not simply clerical or administrative work). In addition to the two days per week of actually

working at the internship, students are all required to participate in an academic component where they meet several times per semester in a class devoted to reflecting on the internship experience and sharing with each other information about the places they work, what the organizations do, how the office works, what the organizations do particularly effectively or not, etc.

The research project component is an optional component of the IED program. Students electing to take this course component participate in approximately six class sessions per semester where they are given guidance on how to choose a research topic, narrow down the focus, develop a research question, gather data, develop a methodology of analysis, conduct personal interviews with officials, and write a series of short papers which ultimately culminate into a 30 to 45 page research paper. The experiential aspects of this course include the usual researching, writing, and presentation activities, but more importantly students are also required to arrange and conduct interviews with at least four policymakers, experts in the field, or other stakeholders involved in the issue under study. Such stakeholders might even include local level community leaders in remote rural regions of the Brazilian Amazon or isolated parts of northern South Africa. Some students purposely arrange interviews with a combination of high level policymakers with local level community leaders, who might be experiencing the impact of higher level decision makers in Washington, DC or elsewhere. Often times, students use the guest speaker sessions as an opportunity to establish contacts and arrange interviews with individuals for their research project. In other cases, students use their own internships or internships held by their classmates to gain access to individuals whom they are seeking to interview for their research project.

All four components of the IED semester program (seminar in DC, overseas trip, internship, and research project) include significant experiential learning elements. In looking back at Figure 1 – the spectrum of experiential learning – it is apparent that the combination of course components and activities within the IED track offers students the full spectrum of experiential learning.³ As is discussed in the following section, this combination of experiential learning elements and these particular course modules can be an extremely effective way to meet the four key challenges presented at the outset of this essay.

MEETING THE CHALLENGES

While there are a number of major challenges and obstacles for educators to overcome in their efforts to deliver the most effective and rewarding educational experience to students, the challenges addressed in the first part of the paper are particularly important for field of global environmental change. As a reminder to the reader, these challenges include:

- connecting the academic setting with practitioners (and other stakeholders)
- strengthening interdisciplinary curricula
- linking students to work experience and job opportunities

³ Admittedly, the structure of the Washington Semester Program is unique in its design as well as in its location in Washington, DC, and this exact model probably would not work in most undergraduate programs. However, as will be argued later, the different components of experiential learning used in the WSP can be incorporated in a variety of different ways within a variety of different institutional settings.

- personally engaging and empowering students

As is discussed below, a lecture-centric format alone is limited in its ability to meet these challenges and ultimately to meet the broader academic goals of educational programs. Without giving students access to and interaction with practitioners and stakeholders and without fully engaging students personally in the issues that they are studying, there will always be certain limitations to the educational experience. The sections below take a second look at the four key challenges above and how the experiential approach can help overcome these challenges.

Connecting Students with Practitioners and Stakeholders

A purely lecture-based approach to teaching undergraduates about the field of global environmental change is unable to bring the students directly into real world environments, institutions, and communities, and thus is unable to provide students with as deep of an understanding that is possible through the addition of experiential approaches. Through the use of site visits, guest speakers, and overseas travel, educational programs can create the environment in which students not only read about, hear about, and discuss certain issues, actors, and dynamics, but the students themselves can ground-truth what they have been reading about in the books or hearing about from the experts.

Anecdotal information from my own experiences helps to illustrate this point. In the IED program, some of my lectures and readings are focused on the causes of deforestation in Brazil's Amazon, the different international economic powers at play, the roles of the World Bank and IMF, and the roles of NGOs such as Greenpeace and the World Wildlife Fund in these dynamics. During the semester, I am able to arrange meetings with representatives from all of these organizations and from government agencies such as USAID, the USTR, and the like. Students read about these organizations and also get to visit them, speak to professionals in these organizations, and later have the opportunity to meet with some of the partner NGOs, government agencies, and communities in the Brazilian Amazon itself. Some students even have an internship with one of the organizations that are directly involved in the issues that we are studying. In many situations, the students themselves are in effect among the practitioners that we are studying in the sense that they are working as part of one of the organizations involved in the issues that we study in class.

While the practitioners involved in the major international institutions, global trends, international treaties, summits, processes, and the like are important resources and important aspects of the study of global environmental change, we must also remember that ultimately the impacts of policy or of other international forces are felt at the local level. For this reason, many of those of us who teach in this field strive to connect the global with the local and we try to connect the policies and practitioners to the local communities. While this can be done domestically through off campus visits (Peters and Stearns 2003), it is only through international travel that students can be exposed directly to the conditions and people thousands of miles away from the global powers but nonetheless feel the impacts of these larger dynamics.

While case studies can be useful in exposing students to the local stakeholders and global-local connections, the overseas travel components of courses or semesters abroad courses put the

students inside the local communities themselves. While doing homestays or even while visiting with different community groups, in Brazil or South Africa for example, students directly interact with regular people on the ground who might or might not be familiar with the global treaties, actors, and dynamics, but who live the daily struggles of survival under conditions where environmental resources are scarce or threatened. Students can directly ask questions and hear personal stories from people implementing policies, designing projects, or are impacted by the policies or projects of others. As one student commented: “The course and the trip were so intense that they changed my perception of the world, my ideas for the future and me” (anonymous 2003).

Students not only ask questions of stakeholders, community members, and practitioners, but the students also receive and respond to questions by these other actors. For example, while in a notoriously troubled and violent community in the *Cidade de Deus* (City of God)⁴ in Rio de Janeiro, my students (mostly Americans, but with students from Indonesia, the Netherlands, France, and Mexico) were able to find out firsthand that much of what they had read and seen about the City of God was one-sided and did not reflect the reality of a truly optimistic and self-empowered community. It is apparent from observations of other educators and from students’ reactions, in discussions, in course evaluations, and in follow-up communications with students years after they have gone through the IED semester, that these types of experiences are ones that the students will never forget and that bring the course material out of the book and into real life.

Strengthening Interdisciplinary Curricula

Educational institutions see the importance of an interdisciplinary curriculum in different lights. In the field of global environmental change, there are certainly areas of specialization, but casual observation of most programs in this field of study shows that a truly interdisciplinary curriculum is the best and most commonly used approach to the study of a field with such multi-faceted sets of dynamics at play. Some programs will emphasize the policy-law connection, while others emphasize science-policy connections, while still others emphasize a geographical or issue-specific (e.g., forestry) focus as part of the larger program on global environmental change. As noted in the description of the teaching panel for this conference (Conference description 2004):

To tackle these problems [of global environmental change] contributions from a variety of natural and social science disciplines are needed. Topics such as the deterioration of the earth system, institutional measures for the greening of policies, policy impact assessment, strategic approaches to multi-level environmental governance require an interdisciplinary perspective. Hence academic training has to adapt new forms of systematic interdisciplinary cooperation.

A lecture-centric approach has limits in terms of how truly interdisciplinary the academic program can be. Instructors themselves can only be experts in so many different areas or fields,

⁴ *Cidade de Deus* is the name of a *favela* (a poor neighborhood or shantytown) in Rio de Janeiro and was popularized by the movie, *City of God* (2003).

and even entire university programs will have very real limitations on the areas of expertise that they can offer. Most educators and most university programs struggle with how to integrate the diverse collection of disciplines involved in global environmental change. Some educators partner up with their own colleagues to help meet this challenge and to create a uniquely integrated interdisciplinary course (Wilensky 2003). However, through the use of guest speakers, site visits, internships, and similar approaches, however, the range of disciplines covered can be vastly expanded, yet coherently integrated, without requiring educators to teach outside of their respective fields of expertise. Educators in such approaches take on a more facilitatory role. As one of my colleagues describes it, in an experiential setting in the classroom:

The educator's role is changed from that of lecturer to that of a professor/facilitator, whose task it is to help students make sense out of their educational experiences. As a result, the educator no longer has the sole responsibility for enlightening, educating and motivating students through a lecture. That responsibility is then shared with students as they become more actively involved in their learning (DiConti 2004, p. 8).

Through the use of guest speakers, off-campus visits, and overseas travel, instructors are forced to enter into areas of somewhat unfamiliar turf and thus become involved in discussions with the class about issues that the instructor sometimes knows rather little about. Being in such a situation can certainly be somewhat unsettling, but ultimately the rewards of bringing to light other dimensions and other disciplines pertinent to the problem or issue at hand far outweigh the risks. As one scholar/educator comments on the rewards of such approaches, "In any event, it is only by relinquishing some academically safe turf – our cultivated zones of expertise – that we discover the promise of cross-disciplinary teaching and learning" (Hempel 2002).

While instructors should not attempt to teach subject areas beyond their expertise, instructors can still use guest speakers to help convey the knowledge of other subject areas and work constructively with students in follow-up sessions to better understand the material discussed by the guest speakers. Over time, instructors spend enough time with experts from other disciplines that the instructors themselves gain a much deeper interdisciplinary understanding of the issues under study and as a result build their own areas of expertise and teaching effectiveness. This is one of the simple by-products of using experiential learning as part of the curriculum.

Linking Students to Work Experience and Job Opportunities

While those of us involved in the study of global environmental change tend to pursue this field of study out of a personal commitment to helping to resolve some of the world's environmental problems, most of us also have to make a living and help provide for our families. Thus, most of us need to find jobs and this is certainly true of students in our classes as well. As noted by DiConti, "Today, what students seem to value most is the ability to translate their undergraduate education into better employment prospects" (2004, p. 3). Even in the field of environmental studies, scholars see this same trend. According to Maniates (2002):

For many, college has become less a wellspring of knowledge, power, or wisdom than a source of vocational insurance. Go to class, get decent grades, do not take chances and maybe, just maybe, there will be a job waiting at the end of the conveyor belt; this, arguably, is how higher education is increasingly perceived by those who consume it.

While not all professors who teach in this field need to be preoccupied with concerns about helping their students get jobs, all institutions and administrators should at least have these concerns in mind. A bachelor's degree is certainly essential for getting students into most entry level jobs in the field of global environmental change, but increasingly employers are looking for someone with at least some of the practical office skills, familiarity of office environments, and at least some interpersonal experiences that can be gained only through working in an office environment – employers need more than someone with an understanding of regime theory, principles of international environmental law, and the like. Thus, internships are the obvious route that students need to pursue.

When internships are incorporated into the undergraduate curriculum itself, students are assisted in their efforts to find an appropriate and rewarding internship – one that does not simply involve clerical work or that might simply involve neighborhood canvassing to advocate certain issues on a door to door basis. More importantly, an internship accompanied by an academic component takes on a new meaning in that students, at least in the WSP and similar programs, are required to reflect on their internship experiences, write about challenges they see within the organization itself, the office environment, and discuss with their classmates and their professor how they or their organization were able to deal with some of the challenges they came across. As most experiential learning theorists argue, these reflection components are critical elements to the learning process (Kolb and Kolb 2003; Fenwick 2000).

Beyond providing students with working experience, getting their feet in the door to certain organizations, and increasing their knowledge of how organizations work and what types of environments they as individuals are most comfortable in, the academic component of the course also allows students to learn about a wide variety of other professional opportunities, organizations, and entire fields of work by hearing from their classmates about what it was like for them to work in different organizations. The guest speakers, site visits, and research project interviews of the WSP are also particularly instrumental for some students as they go about building networks of contacts, discovering new possibilities for future work, and learning more about the types of organizations that they might or might not want to work in after graduation.

Engaging and Empowering Students

The last in the list of key challenges for educators in field of global environmental change is that of engaging and empowering students. As is argued in earlier sections of this paper, creating a personal connection between students and the issues that they study can be one of the most powerful elements in improving a student's level of engagement and performance in the classroom. However, in the field of global environmental change, professors often face the

dilemma of engaging students early on but eventually losing this level of engagement as students go through the semester facing so many seemingly overwhelming global problems. Eventually, students often come away with increased feelings of cynicism and disempowerment as their awareness about the problems and the difficulties in overcoming these problems grows.

It has become increasingly common for educators in our field of study (Hempel 2002; Maniaties 2002) to realize that knowledge, though traditionally viewed as a means for empowerment, can work in a way that disempowers students. As students learn more and more about the abundance of environmental problems, the complexity of them, and the damage that humans are doing to the earth, many students simply become discouraged, feel helpless and inconsequential, and eventually might even give up on continuing their pursuit of studying such issues – ultimately, the students become disempowered either by becoming overly cynical and pessimistic or by simply deciding to abandon the field. Hempel, a scholar and instructor, articulated this scenario quite well:

Many students emerge from a course on global environmental politics with a strong, almost paralytic, sense of the limitations of collective action in a state-centric system. A few, perhaps buoyed by an instructor's enthusiasm, discover new reasons to be hopeful.... Most, however, find the proudly pessimistic, power-centered, incremental outlook of mainstream political science to be much more acceptable, at least academically, than green globalism or the frayed idealism of the sustainable development movement. Ever fearful that they will be regarded by faculty and by their peers as naive or unsophisticated, today's students are likely to leave the classroom more cynical than when they entered (Hempel 2002).

In my own experiences of teaching global environment and development challenges, I will never forget the words that one of my most deeply committed and personally dedicated students said after several weeks of class, "Can't we just talk about cute puppy dogs today." She was tired of hearing about all of the problems and she, along with the rest of the class, needed a break from the doom and gloom that they were hearing.

This sense of powerlessness is an important issue that all of us in this field should be sensitive to. While we should not simply play down the seriousness and pervasiveness of international environmental problems, we can and should open up space for attention on working solutions, innovative approaches, and small-level initiatives that are emerging everywhere. In a lecture-based classroom, professors can engage, inspire, agitate, and empower students to varying degrees, but when you take students out of the classroom and put students face to face with individuals whose lives are devoted to creating new approaches to solving problems, then students can personally see the changes that individuals, small organizations, and communities can make. By meeting with such individuals and hearing their struggles and challenges, yet to see all that they have accomplished, students have a living example that indeed not all is doom and gloom and that individuals can make a difference, a difference that might be at the local level, but that might also be at the national or international level.

One of my former students described how her perceptions and outlook had changed over the course of the semester in her final reflection essay (Spring 2004):

This semester has been a life changing experience for me. Not only did I get to expand my knowledge about development, and especially environment, I got to see the things I read about in books on the ground. Our trip to South Africa really pushed me to think, see and accept things about the situations many people are living in and doing this made me even more passionate about development. I no longer have any idea what I want to do with my life but I know I want to do something to better situations like we saw in South Africa (2004).

Another student wrote something similar at the end of a previous semester experience:

My time in Washington, DC has caused my life to change dramatically. Academically speaking, my experiences in Washington, DC and Brazil have enabled concepts from class to live beyond the page and gave true meaning to multi-faceted concepts such as development. No amount of classroom evaluation could have instilled the concepts of poverty, development, environmental degradation, inequality, and ecotourism to the same degree as our speakers and travels throughout Brazil...More important than the academic growth this semester has enabled is the personal growth that it has catalyzed (anonymous 2003).

Clearly, if our educational programs can consistently have impacts like these on students then we will no doubt have less trouble meeting the academic goals that we have set out for ourselves and for our students. Furthermore, we will have helped contributed to the future changes in the international environmental arena by empowering students through knowledge, through experience, and through a personal sense of commitment and confidence that so many students gain through experiential learning.

Assuming one were to accept that our key challenges as educators in the field of global environmental change include the four emphasized in this essay, experiential approaches such as those described in this essay are powerful tools that can and should be used to complement the traditional lecture-centric approaches. Each of the different elements, or forms of experiential learning, described above offer unique opportunities for students in their efforts to connect to the course material and to the people and organizations involved the material they are studying. Furthermore, these forms of experiential learning have proven to be effective means for not only connecting students with job opportunities but have also proven to have helped brought about personal changes in students lives and a new sense of empowerment to many.

CHALLENGES AND CONCLUDING REMARKS

With all of the benefits of experiential learning, why are higher education institutions not putting these types of approaches into practice more often and why are individual professors not taking the lead in incorporating these elements into their courses? There are a number of very clear and obvious reasons why experiential learning has not taken off as a common approach in undergraduate education, but there are some steps that we as educators and leaders in educational institutions can take to help foster a more welcoming environment for such approaches.

Some of the more obvious barriers to implementing some of these forms of experiential education include the built in reward and penalty systems for schools and for faculty members. For professors, time is an extremely precious commodity and one that is safely guarded and essential if one seeks to research, write, and publish. Taking time out to schedule guest speakers, to arrange off-site visits, or to organize three weeks of overseas travel requires a great sacrifice of time. The amount of the administrative work, logistics, legal and bureaucratic requirements, and actual time spent on overseas travel in particular (24 hours per day with the class) can consume an endless amount of time. Trying to incorporate these experiential approaches will thus almost always directly impact the amount of time an educator has for his or her own research and scholarship. And, as all of us are well aware, scholarship and publishing are critically important for tenure, career advancement, prestige, and recognition as an expert in the field. Kezar and Rhoads (2001) discuss these dilemmas in detail, noting that universities reward publishing, not teaching, and studies of salaries also reflect this reward system.

Beyond these real limitations and obstacles to implementing experiential learning, universities also struggle with assessing the impacts of experiential learning in terms of better grades, increased analytical abilities, improved graduate school test scores, and job marketability of students. While my impressions and personal observations (as well as what some of the preliminary research in this area have indicated) would lead me to believe that all of these outcomes are improved through experiential learning, there has been relatively little serious research to effectively show statistical improvements in these areas directly resulting from experiential learning.

Unfortunately, most of those involved in implementing experiential learning simply do not have the time to devote to studying the impacts of experiential learning. As explained by Kezar and Rhoads, “the tripartite divisions of teaching, research, and service make it difficult for instructors to adequately communicate their efforts in the area of service learning” (2001, p. 150). I personally struggled greatly in finding the time to write this paper to share my experiences on experiential learning. Much of this paper was in fact written while on the rivers of the Amazon region in Brazil, in between hikes in the forests, meetings with community members, working out trip budgets and payments, helping students with translating menus at restaurants, and beginning to plan the upcoming trip to South Africa and Mozambique in the coming semester. The “dynamic tensions” – as Kezar and Rhoads call it – are real.

Given such time constraints on time and such heavy increases in workload that experiential learning can require of faculty members, the academic community cannot depend on individual professors to carry the entire burden of carrying out experiential learning without lending additional support from university administrative or support offices. Kezar and Rhoads, among others, argue that university programs should provide alternative sources of incentives for instructors pursuing experiential learning approaches since pursuing such approaches directly impact the amount of time that instructors have to put toward research or service. The university administration, assuming it supports the notion that experiential learning can provide the benefits described in this paper, need to find creative ways to reward efforts to design and implement experiential learning and need to mitigate the penalties that faculty members incur (in terms of less time for publication and research) when carrying out experiential learning. In the

Washington Semester Program, where I teach, we do have some forms of support and some forms of rewards that are not typical of the traditional university programs, but nonetheless even we struggle with implementing the non-traditional approaches. Hopefully, university administrators will increasingly appreciate the value of experiential learning and will begin to develop new ways for rewarding those who put in the time and effort to developing and implementing such approaches. In the field of global environmental change in particular the rewards of complementing the lecture-centric approach can be profound and for some and might even be worth the sacrifices that might accompany the greater efforts.

Appendix 1. Sample Weekly Schedule – International Environment and Development

Monday	<p>Lecture:</p> <p>Speakers:</p> <p>Office Hours:</p>	<p>9:00 - 10:30 a.m. in Dunblane Bldg. #101 Introduction to Global Environmental Problems, Actors, and Treaties</p> <p>11:45 a.m. - 1:00 p.m. Presidential Lecture at the World Bank Featured Speakers include James Wolfensohn, President of the World Bank, and Michael Moore, Former Director-General of the World Trade Organization</p> <p>2:00 – 5:30 p.m. (use sign-up sheet)</p>
Tuesday and Wednesday		Internship Days
Thursday	<p>Speakers:</p> <p>Topic:</p> <p>Speaker:</p> <p>Topic:</p>	<p>9:30 – 11:00 a.m. in Dunblane #104 Lori Brutton, U.S. State Department, Bureau of Oceans and International Environmental and Scientific Affairs U.S. State Department and Sustainable Development Partnerships</p> <p>1:00 – 3:30 p.m. at the World Wildlife Fund – 1250 24th St. NW Tony Mokombo, Senior Program Officer, Africa Region, WWF Western Congo Conservation Initiatives and Challenges</p>
Friday	<p>Speaker:</p> <p>Topic:</p> <p>Speaker:</p> <p>Topic:</p>	<p>10:00 -11:30 a.m. – Meet at the World Bank main building at 10:20 a.m. Dr. Robert Watson, Chief Scientist and Director, Environmentally and Socially Sustainable Development Network and Former Chairman of the United Nations Intergovernmental Panel on Climate Change Climate Change Science, Policy, and Politics</p> <p>2:30-4:00 p.m. at The Nature Conservancy Bill Millan, Sr. Policy Advisor, International Programs Conserving Biodiversity – The Nature Conservancy and Its Approach</p>

Appendix 2. Sampling of Organization Visits by Category

Intergovernmental Organizations

Global Environmental Facility
World Bank
International Monetary Fund
Inter-American Development Bank
Organization of American States

U.S. Government Agencies and Offices

U.S. Congress
White House
U.S. State Department
U.S. Trade Representative (USTR)
U.S. Agency for International Development (USAID)
Environmental Protection Agency (EPA)
Export-Import Bank
U.S. Commerce Department

NGOs / Non-Profits

Center for International Environmental Law (CIEL)
Forest Stewardship Council - U.S. (FSC)
World Wildlife Fund (WWF-US)
The Nature Conservancy (TNC)
Conservation International (CI)
African Wildlife Foundation (AWF)
Oxfam
Greenpeace
Population Action International

Think Tanks, Embassies, and More

Carnegie Endowment for International Peace,
The CATO Institute
Woodrow Wilson International Center for Scholars
Brookings Institute
Resources for the Future
World Resources Institute (WRI)
Embassy of Brazil
Embassy of South Africa

Appendix 3. Semester at a Glance

Unit 1: International Development: Global Challenges		Aug 26	Orientation: First Meeting and Introduction
	Week 1	Aug 30 - Sep 3	Development and Sustainable Development: State of Affairs and Emerging Agenda
	Week 2	Sep 6-10	Poverty, Population Pressure, and Agriculture
	Week 3	Sep 13-17	Foreign Assistance, Debt, and Macroeconomic Policies
	Week 4	Sep 20-24	North and South in the Global Economic System: Trade, Capital Flows, Institutions
Unit 2: Global Environmental Problems and Responses	Week 5	Sep 27 - Oct 1	International Environmental Problems, Politics, and Actors
	Week 6	Oct 4-8	Climate Change, Ozone Layer, and Environmental Treaties
	Week 7	Oct 11-15	Biological Diversity and Global Forest Issues
	Week 8	Oct 18-22	Market Solutions, Ecotourism, People and Parks
Unit 3: National & Community Level Focus: A Look at Brazil	Week 9	Oct 25-29	Environment & Development in Brazil
	<u>3 Weeks</u>	Nov 2-23	<u>Brazil Field Practicum</u>
	Week 13	Nov 23-26	Return from Brazil / Thanksgiving Break
	Week 14	Nov 29 - Dec 3	Brazil Trip Debriefing
	Week 15	Dec 6 – 10	Group Project Work and Presentations
	Week 16	Dec 13 -16	Final Class and Final Assignments Due

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